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## WORLD EPIDEMIOLOGY REVIEW

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This serial publication, based on worldwide press and radio reports, contains information on the epidemiology of human, animal, and plant diseases. Disease incidence, reported outbreaks, and various related epidemiological factors are included. Items are presented by country of occurrence rather than by country of original press report.

CONTENTS	PAGE
I. HUMAN DISEASES	
ALBANIA.....	1
BENIN.....	1
BRAZIL.....	2
CHAD.....	10
CONGO.....	11
EAST GERMANY.....	12
ECUADOR.....	15
FRENCH TERRITORY OF AFARS AND ISSAS.....	16
GABON.....	19
GREECE.....	19
INDONESIA.....	21
IRAN.....	21
ISRAEL.....	24
PERU.....	24
QATAR.....	27
REUNION.....	30
RHODESIA.....	31
TANZANIA.....	32
TOGO.....	33
TURKEY.....	34
UNITED ARAB EMIRATES.....	35
USSR.....	36
ZAIRE.....	40
ZAMBIA.....	43

CONTENTS (Continued)	Page
II. ANIMAL DISEASES	
BRAZIL.....	45
LAOS.....	48
PERU.....	49
VIETNAM.....	50
III. PLANT DISEASES AND INSECT PESTS	
BRAZIL.....	52
CAMEROON.....	52
PERU.....	53
ZAIRE.....	54
ZAMBIA.....	56

## I. HUMAN DISEASES

### ALBANIA

#### HEALTH MINISTRY EMPOWERED TO USE EXTRAORDINARY MEASURES

Tirana GAZETA ZYRTARE in Albanian No 4, 22 Oct 76 p 55

[Decree Amending Decree No 1894 of 5 July 1954 "On Combating Contagious Diseases"]

[Text] On the basis of Article 58, point 6 of the Constitution and upon proposal of the Council of Ministers, the Presidium of the People's Assembly of the People's Republic of Albania resolves:

Article 1. Article 7 is amended as follows:

"When signs of a particularly dangerous contagious disease appear or diseases are spread among the masses, extraordinary measures should be taken by the Ministry of Health to combat and localize these diseases."

Article 2. This decree goes into effect immediately.

Tirana, 15 October 1976, Decree No 5439

For the Presidium of the People's Assembly of the People's Republic of Albania: Secretary: Telo Mezini; Chairman: Haxhi Lleshi

### BENIN

#### INCIDENCE OF LEPROSY IN BENIN

Cotonou EHUZU in French 27 Jan 77 p 4

[Text] Porto-Novo--In the interim before giving them the character of a traveling chautauqua, the festivities organized each year for the benefit

of our brethren with leprosy will be held this year, as in the past, in Oueme Province. This was the decision of the Raoul Follereau Provincial Committee which met in Porto-Novo on 24 January under the chairmanship of Comrade Joseph Zocli, secretary general of the province, representing the prefect who was absent.

The 24th Leprosy Day, observance of which is set for Sunday, 30 January, will thus be organized by each district in the best interests of the patients in each territorial division. According to Ohoungbogbo Maurice, head of communicable diseases sector number 1, of approximately 42,000 lepers detected in the Benin People's Republic, 3,424 are in Oueme Province, including 353 lepromatous cases, i.e., the most serious and most contagious form of the disease. In these statistics, issued on 31 December 1976, the rural district of Pobe comes at the top, with 957 patients.

The most serious cases are also found in this district near Nigeria; it is followed by the rural district of Ketou, where 725 patients have been detected. There have been 492 patients counted in the rural district of Houlenou, 467 in Adjohoun, 408 in the two urban and rural districts of Porto-Novo, 335 in Sakete, and 40 patients in Avrankou.

Of the total of these figures, 1,824 lepers show up regularly for medical care; 1,502 cases have been improved in 1976 and nearly 200 cleared up.

Let us point out that communicable diseases sector number 1 has available one automobile circuit based at Porto-Novo for medical care, and three motorcycle circuits for the entire province.

The project for constructing a modern leprosarium, the first in Oueme Province, is well underway. A portion of the funds is already extant.

When the time comes, the Raoul Follereau Provincial Committee will decide on the location of this health unit whose purpose is to improve the social conditions of leprosy patients.

Finally, the Raoul Follereau Provincial Committee expressed the desire to relaunch the various district subcommittees which seem to have sunk into lethargy, hoping that they will undertake better activities.

## BRAZIL

### AUTHORITIES TEST NEW DRUG TO COMBAT SCHISTOSOMIASIS

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 4 Jan 77 p 16

[Text] In February the Ministry of Health will make a definitive test in Touros, Rio Grande do Norte, with Fiocruz-01, a new medication. It has

already been approved after two experiments and is intended to exterminate the snail, a transmitter of schistosomiasis. Fiocruz-01, which has been tested at focal points of the disease in Ceara-Mirim, Ceara and at Jacarepagua, in Rio, is an abietate of copper composed of abietic acid and copper sulphate, and has proven that, aside from destroying the snails, it has three advantages over other known drugs: it is non-polluting, has a much slower action, and is five times less expensive.

Experiments were made in Ceara-Mirim and Jacarepagua by SUCAM [Superintendency of Public Health Campaigns], which had already sent reports to Minister Paulo de Almeida Machado. Incidentally, the minister has kept up with the tests in Ceara and did not wish to give a definitive opinion, but, according to the health department in Rio, preferred to await reports from SUCAM and the more complete tests to be made in Rio Grande do Norte. According to the Bulletin of Epidemiology of the SESP Foundation [Special Public Health Service] in Touros of the same ministry, the incidence of schistosomiasis affects 74.3 percent of the population, one of the highest in the entire Northeast.

In the tests made in Ceara and in Rio de Janeiro, Fiocruz-01 proved to be more effective than the other three products utilized up to now: copper sulphate, pentochlorophenate and bilurcide, which are considered more expensive, more pollutive, and less effective, aside from requiring imported raw material to manufacture.

Schistosomiasis, officially denominated the Snail Disease by the Ministry of Health--as in the case of leprosy, which became Hansen's Disease--at present affects approximately 10 million persons throughout the country. To combat the disease the government has established the Schistosomiasis Special Control Plan. According to the Bulletin of Epidemiology, the situation tends to become aggravated because of the failure to take precautions on highway construction projects. "With the construction of big highways such as the Transamazon and Belem-Brasilia highways," the bulletin states, "it is feared that the flood of migrants may end by definitively introducing schistosomiasis into the Amazon region."

In 1975, 84 cases of Manson's Schistosomiasis, transmitted specifically from states in the Northeast, were identified on the Transamazon Highway in the cities of Maraba and Altamira in Para. Aside from this, Paulo de Almeida Machado himself has reiterated in several interviews that if schistosomiasis should reach the Amazon, it would be very difficult to control it.

#### ENCEPHALITIS ON THE RISE IN VALE DO RIBEIRA

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 11 Jan 77 p 19

[Text] Ten cases of encephalitis have already been reported this year in the Vale do Ribeira, making an average of one case a day, according to



information from doctors at Pariqueira-Acu hospital. Jacupiranga is the most affected municipio, with three cases, whereas Miracatu and Pariqueira municipios have reported two cases each. The three remaining cases are shared among Cananeia, Iguape and Registro.

However, according to Zelman Debert, an adviser to the Secretariat of Health, who keeps up with cases of encephalitis in the Vale do Ribeira, only seven cases have been reported, and not 10 as doctors have stated. This figure is considered to be within the secretariat's predictions in endemic control of the disease. According to doctors, it is not a question of an epidemic outbreak but an endemic disease that recurs with greater intensity during the hot months.

While the figures furnished by the Secretariat of Health report 14 cases in December, hospitals in the region mentioned eight cases with one death and only two in November. This also contradicts the data from the secretariat, showing nine cases in November, whereas the average turned out to be five cases a month from April 1976.

Patients in Pariqueira-Acu are hospitalized in an isolated area with a 20-bed capacity, but the hospital has a 164-bed capacity, all of which are now occupied. If the incidence of the disease increases, it will be necessary to establish emergency wards. However, local doctors believe there is no cause for alarm because the population of the Vale do Ribeira must already have received antitoxin inoculation against the disease, which is likely to continue to attack only those with the lowest resistance.

#### MEASLES OUTBREAK IN BAHIA FATAL TO 18

Rio de Janeiro O GLOBO in Portuguese 12 Jan 77 p 8

[Text] Salvador--Yesterday, Ubaldo Dantas, secretary of health for Bahia, called a press conference to deny a report that three children a day might die as a result of an outbreak of measles reported in Morro do Chapéu Municipio, in the Bahian backwoods, 380 kilometers from the capital.

According to the secretary, who exhibited the doctor's report who had inspected the area, the number of deaths during the last 2 months was 18, or two adults and 16 children. The inhabitants of Morro do Chapéu, who mentioned 40 to 50 deaths, said, the same as the secretary, that there was no civil register of deaths in the affected regions, leaving a doubt as to the actual number of victims.

"Three deaths a day is a very high average and would represent more than a public calamity, especially in a village such as Arizona (1,000 inhabitants), the main settlement affected," the secretary emphasized.

He confessed that he had learned of the outbreak from the press when he had mobilized Florisvaldo Barberino, director of the Eleventh regional

administration of the neighboring municipio of Jacobina, to inspect the region and take the necessary steps. From then on, technicians with vaccines, needles for vaccinations and medicines were sent.

As stated, deaths were caused by measles, aggravated by malnutrition among the population, victim of constant droughts.

"Measles is a benign disease when it attacks well-fed children, but in the case of malnutrition it may attack the eyes, the brain and even cause death," he remarked.

"Unfortunately, such cases as these occur in any village in the country, considering our socioeconomic conditions," the secretary said. "In some counties the government health program is efficient, but in others it is deficient, and there is no health care service in any state up to the level of districts," Dantas admitted.

As to the problem of protecting the population stricken by the measles outbreak, the secretary said it is a matter beyond the health department's jurisdiction, but contracts have been made with INAN [National Food and Nutrition Institute] and CEMA, so there will be no lack of food or medicine.

#### AMAZON REGION INDIANS VACCINATED AGAINST TUBERCULOSIS

Rio de Janeiro O GLOBO in Portuguese 22 Jan 77 p 8

[Text] Belem--At a meeting of the Ministry of Health held in this capital, Dr Jose Antonio Nunes de Miranda declared yesterday that "more than 80 percent of the aboriginal population of Amazonia has already been vaccinated with BCG and is immune to tuberculosis." He remarked that the task is hard and slow on account of the distances and the difficulties of the approach. "Distrustful, they come to the vaccinators in small groups. The task of immunizing 3,000 persons, which is done in a day at any center in the city, takes nearly 6 months among the Indians."

Jose Miranda, who has already traveled more than 900,000 kilometers to vaccinate the Indians under a program in cooperation with the National Indian Foundation (FUNAI), reminds that they have no resistance, and they inevitably contract tuberculosis when they come in contact with the white man. "If the tribe is not vaccinated, it can set off an epidemic with a high rate of mortality."

#### Control

The information was furnished in the course of the 2d Coordination Meeting of Tuberculosis Programs--North Region, which brings together the teams of Para, Amazonas, Maranhao, Acre and the territories of Roraima,

Amapa and Rondonia. Doctors, male nurses, biochemists and social workers exchange information concerning the tasks performed in their areas, under the sponsorship of the National Tuberculosis Division.

With regard to the prevention and treatment of the disease, Dr Jose Miranda also said: "The control of tuberculosis is mostly an administrative problem. We have vaccines which guarantee 80 percent [portion missing] guarantee 100 percent cures. We have only to provide medicines to the sick and vaccinate the healthy in order to control tuberculosis. Any person can manage that. We already have Indians taking care of Indians."

The meeting, in his opinion, is intended to improve the administration "in order to hasten the delivery of vaccine to the healthy, preventing them from getting sick, and of medicines to those already sick with the disease."

#### DECLINE IN MALARIA NOTED IN 30 MUNICIPIOS OF AMAZON REGION

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 26 Jan 77 p 11

[Text] The Superintendency of Public Health Campaigns (SUCAM) managed to eradicate malaria in 30 municipios of Amazonia, but the rest of the region continues to be mainly responsible for the transmission of the disease in the country, asserted yesterday in Belem the superintendent of the agency, Ernane Mota.

The SUCAM superintendent also explained that "this is the first time that the transmission of malaria has been halted in forest areas anywhere in the world." In 1976, according to him, there was a drop of 7,000 cases of malaria in comparison with 1975, and 4,000 cases of that total figure concerned Amazonia alone. The halt in the transmission of the disease occurred in some areas of the states of Para, Amazonas and Maranhao.

The greater part of the 30 municipios--which comprise an area of 276,000 square kilometers--still has not been affected by the opening of major roads or the implementation of agricultural and livestock-raising projects, as was the case in Cameta, Baiao, Barcarena, Moju and the municipios of the Braganca region, all in Para.

But the transmission of the disease can be halted also in some municipios which underwent transformations, such as Santarem.

The SUCAM will now exert a "rigid" epidemiologic control in the whole area of those 30 municipios, although the majority of the field personnel in charge of applying DDT will have to be moved to the areas where the incidence of malaria is still high, such as in the south of Para, the southeast of Maranhao and the north of Mato Grosso.

According to Superintendent Ernane Mota, Amazonia at this time presents "a new situation" which the SUCAM cannot ignore, and which was created from the moment that the government decided on the economic settlement of the region, opening new roads (Transamazonian and North Perimeter, among others) and promoting the establishment of large agricultural and livestock-raising units. "Thus," he asserts, "it is now known that there are some areas which show a high incidence of malaria, where the disease has been concentrated. It is there that the SUCAM intends to act at this time."

#### ENCEPHALITIS IMMUNIZATION CAMPAIGN TO BEGIN IN MARCH

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 30 Jan 77 p 31

[Article by Marielza Augelli]

[Text] Early in March, the Health Secretariat should begin an extensive vaccination campaign against encephalitis for the purpose of immunizing about 300,000 persons throughout Ribeira Valley and the Southern Littoral of Sao Paulo. With the first lot--100,000 doses--of the new vaccine produced by the Butanta Institute in Sao Paulo, the secretariat intends to start the vaccination task in a previously surveyed and prepared municipio of the valley, which probably will be Pariquera-Acu.

That information was personally confirmed by Health Secretary Walter Leser yesterday, in an exclusive interview with O ESTADO. The secretary stressed, however, the problems that the technicians of his agency are encountering in planning the overall vaccination program in an area which is well-known for its difficult accessibility and the dispersion of its inhabitants, who must be carefully motivated to receive three consecutive doses of the anti-encephalitic vaccine.

"We had a considerable task when we vaccinated the whole state against meningitis," explains Walter Leser, "but all that seems like child's play compared to our next campaign." In the case of meningitis, there already existed motivation on the part of all the 20 million persons who were to be vaccinated, and, moreover, a single dose was required, continued the secretary.

At present, the Brazilian vaccine against encephalitis must be administered in two doses set a week apart, followed by still a third dose a month later. For that purpose, sanitarians and technicians of the Coordinating Committee of Arbovirolosis Activities (arbovirolosis is a disease transmitted by insects) are preparing an extensive sanitary education program which should make clear to the community chosen for that first phase the importance of taking each one of the three doses, as well as insure a favorable reception for the vaccinators.

Prof Walter Leser also explained that several teams are developing control and evaluation systems that will make it possible to verify that those who are vaccinated the first time return to receive the other doses, without which the vaccine will not be effective. Another problem which concerns the team that organizes the distribution of the vaccine is how to reach the greatest number of persons.

"In the beginning, it was thought that the same technique of the 'malaria operation' would be used," says Leser, "when the teams coordinated by the Superintendency for Control of Endemic Diseases (SUCEN) moved from house to house in the area."

However, although it seemed to be the best method at first, it was not long before the technicians desisted from that idea in view of the fact that the persons who are most exposed to the virus which causes encephalitis--young, mostly male adults--would be away from their homes during the day.

For that reason, the secretariat decided to concentrate the vaccination teams in the community schools of the area, which, in the opinion of the health secretary, is the most reliable method, "provided the educational task is perfect," he adds. In fact, 15 days before the start of vaccination, several instructors of the area and of the secretariat will be urging the people through local leaders, clergymen, teachers and students, or even at bars and other gathering places of the city, to get vaccinated.

The municipio of Pariqueira-Acu may be the first city to receive the vaccine in view of the fact that, according to studies of the whole area, it exhibits some of the typical characteristics of the other locations that are to be reached. In the first place, we would have to start with a community that offered major facilities and also provided a certain backup, says Walter Leser. The Regional Hospital of Ribeira Valley is in that municipio and, in turn, close to Registro, where the Health Division of the valley is located. Those places are important at least in the beginning, when the greatest number of teams will go afield and will need a backup place.

The task should begin in Ribeira Valley, an area where several cases of encephalitis were registered in the first half of last year and a few others (10 cases) have already occurred this year. However, it is also planned to take care of the Southern Littoral, particularly Itanhaem, Monguagua and Peruibe, which suffered an actual epidemic outbreak of encephalitis in the first half of 1975.

Since the start of the outbreak in March 1975, there have been 835 cases and 99 deaths due to encephalitis, which in Brazil is caused by a virus transmitted by a still unknown mosquito. To date, the only method to curb the disease in the effort to break the transmission cycle is the fight against the vectors by means of the spraying of insecticides and the

control of the larvae conducted in the homes, on the land and in the air over an area of approximately 300 million square meters.

The vaccination campaign should begin after countless researches and scientific studies of the Brazilian vaccine which were started 21 months ago. It was hardly 9 months after characterizing the encephalitis outbreak of the Southern Littoral that the Arthropod Transmitted Virus Section of the Adolfo Lutz Institute managed to isolate the arbovirus (virus transmitted by insects) responsible for the disease. According to virologist Oscar de Souza Lopes, chief of that section of the Adolfo Lutz Institute, it was through samples of the nervous tissue of patients who died in the hospitals of Iguape, Cananeia and Pariquera-Acu that they uncovered the virus, identified as belonging to Group B, similar but not the same as the virus which causes the same disease in Japan and therefore completely new to science.

"Although the mosquito is unknown, all evidence indicates that it is unmistakably sylvan," explains Oscar Souza Lopes, "with a transmission cycle which includes the mosquito and wild birds. That evidence was the result of various researches conducted among the affected people, who generally work in the rural area and mostly belong to the masculine sex."

After the virus was isolated, it was then up to the Butanta Institute to start the process of developing a vaccine. The production stages of the vaccine include the inoculation of the virus into the brains of newborn mice 2 to 5 days old. Each newborn animal will furnish 200 milligrams of brain tissue which will be mashed, centrifuged and inactivated with ultraviolet light. The brain of a mouse provides four to five doses of vaccine of 1 milliliter each.

The vaccine produced by the Butanta Institute, according to its technicians, is made from inactivated virus and, for that reason, requires the administration of three doses which provide immunization for a period that has been estimated at approximately 1 year, and after that, a booster dose. The institute already has 100,000 doses available and is conducting the final tests for sterility, innocuousness and residual virus--that is, if there are other viruses also present in the end product--relative to the safeness and potency of the vaccine.

In addition to all these tests, according to sources in the Butanta Institute, there will be volunteers among the technicians working in the production of the vaccine who will receive the vaccine for the purpose of conducting serological tests to verify the extent of immunization against the disease. In this manner, the formation of antibodies against the disease in the organism after the administration of the vaccine can be ascertained.

According to Fauze Carlos, director of the Butanta Institute, the institution should be able to produce antiencephalitic vaccine on a commercial

scale, and 300 mice are received daily for that purpose, which means that the production capacity will be approximately 15,000 doses a day.

## CHAD

### LEPER WORLD DAY CELEBRATED

N'Djamena INFO CHAD in French 31 Jan 77 p 4

[Text] Yesterday morning the 24th Leper World Day was celebrated at the Chagoua leprosarium. Thousands of N'Djamenois men and women turned out in full force to express their sympathy for our handicapped brothers. Some folk bands in a variety of costumes organized some country dances here and there to relieve the tension.

The state secretary of health, labor and social affairs, Acyl Mahamat, who presided at the ceremony, pointed out that this celebration, now become traditional, honors two basic principles: to restore a human dimension to the sick stricken with leprosy and to wage a ceaseless battle against the disease.

The secretary of state highlighted the efforts put forth by the government, international organizations, medical and paramedical personnel to befriend our sick brothers, in order that "they may experience a more worthy existence and take advantage of the most effective medical treatment." Mr Acyl launched an appeal for an increased awareness of this scourge and for the lepers' need for material and moral assistance, for, he said, our country has 25,000 of the 15 million lepers in the world, 5 million of whom are in Africa.

Mobile squads scour the Chad territory looking for new leprosy cases, and, if need be, providing the necessary care for those who, living far back in the brush, already have it. The secretary of state also made public the wide health coverage on a national scale by the establishment of permanent major epidemic centers in the towns. Mr Acyl then summed up the balance sheet of works undertaken at the leprosarium: the restoration of hospital care, dwelling and dispensary units; the repair of the millet mill and the drilling of a well.

## CONGO

### FOCI OF BILHARZIASIS

Brazzaville ETUMBA in French 1-8 Jan 77 p 9

[Article by Dr Aime A. Bouekassa]

[Excerpts] In the Congo, as in most of Africa, bilharziasis is spreading and increasing in intensity. This is why the Congo Labor Party and the government have asked the Ministry of Health and Social Affairs, in collaboration with WHO, to undertake research into the infection throughout the country. The ministry has already launched a detailed plan to combat the spread of the disease.

Placid streams, ponds and lakes are the favorite habitat of these mollusks and the Pinare stream at Loubomo, among others, where there are ponds along the river edge, bears mention as the place where the spread of the disease begins. Children become infected or spread the disease when they bathe or when they play in these stretches of water.

In our country, the four main foci of contagion are in Nkayi, Loudima Gare, Loubomo and Kibangou. More than 80 percent of all the cases of schistosomiasis [bilharziasis] have been infected in these four principal foci. There are other foci of lesser importance in the Niari valley, for example, in Favre, Pont du Niari, Kimoulet, Boukou-Packa, Moukeke, Kikongo, Kistindi, Dingui-Malembe and in several villages near Madingou, etc., as also in the Kouilou region (Lake Kayo and Lake Nyanga, Guena and the neighboring villages, Banda, Tchipeze near Les Saras and in the village of Mboukou-Massi).

This disease can also appear in several foci in the north of the country on the Cen-Gabon border and in the Central African Republic but we do not yet have any positive proof of its appearance. Host mollusks have been found at Brazzaville in Mfoa and on the M'bamou island but the infection is probably not yet endemic in these places of possible contagion.

Very fortunately, the disease has not appeared in the sandy areas such as in the Bateke tablelands.

What's to be done? Ten years ago combating this disease was very difficult. Today prospects for combating it are far more encouraging.

Bilarcil, a new medication, holds out hope of an effective large-scale treatment. A small-scale test of this medication was recently carried out by Major Endemic Service at Loubomo and this test has been crowned with success.

Bayluscide, a chemical product that kills mollusks, in other words, a molluscicide, is to be applied in small amounts in centers of transmission



in order to prevent infection. Health education programs for school children and the public at large are to be put into effect. In-depth research projects on water supply in the homes and the drainage of waste matter are to be undertaken at Loubomo, Nkayi, Loudima Gare and Kibangou. They should make it possible to obtain international or bilateral support in order to undertake the necessary, costly and indispensable works to stamp out bilharziasis hereafter.

The minister of health and social affairs plays a very important part in combating this disease which was introduced into the country around 1923 during the construction of the Congo-Ocean railroad.

The party and the government are asking the people to lend their support in combating this disease which threatens the health of our country's people. The fight against this deadly endemic disease, which actually put a brake on the development of the regions which are among the richest in our country, is a struggle involving everyone. The precautionary measures to be taken to ward off bilharziasis are very simple inasmuch as they consist only in avoiding frequenting those places (ponds, rivers, etc.) believed to harbor agents causative of this disease.

Although adults are generally aware of it and refrain from frequenting these places, children, generally speaking, are not aware of it, or more exactly, do not attach due importance to the risks to which they are exposed in going to these places. This is why the Ministry of Health and Social Affairs has availed itself of the opportunity presented to notify the people that children and also adults should no longer frequent infected rivers and ponds.

The people should constantly cooperate with the health service agents in order that the fight against bilharziasis truly become everyone's battle.

#### EAST GERMANY

#### RESEARCH CONTRIBUTES TO THE AVAILABILITY OF EFFECTIVE MEDICINES

East Berlin PRESSE-INFORMATIONEN in German 14 Jan 77 pp 4-5

[Article by Dr Dieter Eschnor]

[Text] Because of intensive medicine research and development, about 80 percent of the successes achieved in prevention and cures are attributable to the application of medicines. Nevertheless 6 to 8 years often pass before a specific substance becomes a medicine and is available for use as a preparation for treatment.

In order to shorten this development time and more quickly to make available effective and modern medicines for health care and veterinary work, the pharmaceutical departments of the advanced school system are increasing their contribution to medicine research in close cooperation with the pharmaceutical industry, not least through a practice-related training of pharmacists.

The continual improvement of available forms of medicine and the development of new ones is an important research target of the scientists of pharmaceutical technology at the universities of Halle and Greifswald. With the help of a small technical school at the University of Greifswald work is being done, for example, on the development of new kinds of plastic dropper-bottles for liquid medicines. They insure a more trouble-free dispensing and a longer shelf-life of the medicines.

The University of Halle is working on the development and optimization of solid medicines, for instance with encapsulation or coating into the form of dragees. Along with pharmacological questions, such problems as the preservation, structure, color, and shape of the dragees are being solved with the help of pharmaceutical-technological research methods.

As in the past, great efforts are required to develop further such types of medicine as will make the active ingredient optimally effective, guarantee a good toleration and display high capacity for preservation, form the dosage favorably, and restrict side-effects.

Research is continually working on the improvement of types of medicines such as microcapsules, film tablets, dragees, as well as inoculants, salves, aerosols, etc. Because in the case of certain virus-caused illnesses of the respiratory system, the digestive tract, and the eyes, treatment with inoculants promises little success, these virus diseases might be combated through the development of appropriate virostatics as solid medicinal types. In this branch of research there exists a promising cooperation among the scientists of the Immunopathology Academy Institute of Jena and the Humboldt University of Berlin.

Agriculture also has justified requirements for appropriate pharmaceutical preparations which serve for the maintenance of the health of animal stocks and an increase of animal production.

Medicine research is dynamic. Stagnation means backwardness. Part of the necessary scientific start should be assured during the training of the next generation of scientists, in which research and training are not separated.

A practice-oriented training serves to prepare pharmaceutical higher school cadres comprehensively for their activity in industry and public health. Consequently, the members of the higher schools cooperate directly in the development, production, control, and testing of medicines.

This is taking place on the basis of the training documents introduced in 1975. A 16-week professional practice course for the specific preparation of students for the tasks of practice also provides primarily for the raising of the share of exercises and practice. After thorough preparation, the special course "Experimental Pharmacology and Toxicology" was recently introduced at the University of Greifswald. The purpose of this measure is to make available for practice specialists who can work in the field of ingredient research both through analytical chemistry and through experiments on animals, and who possess a knowledge of the range of medicines.

Those who complete this special course will be qualified to help to solve the complex problems of the development and production of medicines and equivalent products for human and veterinary medicine.

The assignment of diploma and matriculation tasks corresponding to the areas of research concentration and the further enlistment of students in research within suitable youth projects likewise serves to improve practice-oriented research in the pharmaceutical departments of the higher school system. The scientific achievements of the youth project "Medicine Standardization" of the Pharmacy Section of the University of Halle received high recognition through the award of the "Adam Kuckhoff Prize."

#### NEW PHARMACOPOEIA ISSUED

Bonn INFORMATIONEN in German No 2, 1977 pp 8-9

[Text] As of 1 January 1977 a new pharmacopoeia has become effective in the GDR, which supersedes that published in 1964. This seven-volume, loose-leaf edition contains general quality, test, and safety specifications for all medicines, including serums, vaccines, monographs for about 850 medicines, and about 100 monographs for standard prescriptions. The new GDR pharmacopoeia is the legally binding basis for both the production of medicines and hygienic agents and the dosage, storage, and dispensation of prescription medicines. The new pharmacopoeia adopted for the first time specifications from the Compendium Medicamentorum, which is the standard work of CEMA countries for the testing and guarantee of quality of medicines. According to the GENERAL [East] GERMAN NEWS AGENCY, the pharmacopoeia, which is now available in German and Russian, has been formulated "under the leadership" of GDR scientists.

#### MEDICAL CARE STATISTICS

East Berlin NEUE ZEIT in German 26 Jan 77 p 3

[Excerpts] At the present time the GDR has 577 hospitals with over 182,220 beds. Therewith the GDR, compared with the availability of such

facilities in other countries, holds seventh place in the world. In 1975 there were 522 polyclinics, 929 outpatient clinics, 1,075 city and rural ambulances, 1,606 state medical and 946 dental practices, 5,061 parish nurse clinics, and 2,051 physicians' and 1,227 nurses' first-aid stations in the GDR. Today in the GDR there is one physician for every 540 inhabitants and one dentist for every 2,183 inhabitants. This means that, in terms of medical care of its population, the GDR is among the leading countries in the world. By 1980 there is to be a physician/patient ratio of one per 500 citizens and a dentist/patient ratio of one per 2,000 citizens.

#### ECUADOR

##### TYPHOID OUTBREAK PROBLEM AGGRAVATED BY DOCTORS STRIKE

Montevideo EL PAIS in Spanish 7 Jan 77 p 3

[Text] Quito, 6 Jan--Early this morning, the military government took over the hospitals which were in the hands of the striking interns, when the emergency produced by the typhoid fever epidemic created a panic among the population of this capital. Police forces occupied the hospitals and medical dispensaries after the striking interns refused to change their attitude.

Health Minister Asdrubal de la Torre and other doctors of the ministry joined the staffs of the hospitals abandoned by the strikers, where more than 1,000 patients await treatment.

The secretary of state conceded that one person has died from typhoid to date, but he urged the inhabitants to remain calm and that only those who are in contact with patients be vaccinated.

Mobile units furnished with doctors and nurses of the armed forces and the police are in operation in various outlying sections of this city of 600,000 inhabitants.

The medical authorities indicated that the source of typhoid, with more than 1,000 cases to date, can be controlled by the observance of strict hygienic measures and the provision of medicines to the sick persons.

The epidemic coincided with the start of an indefinite strike for better scholarships by the medical students who work as interns in the hospitals.

The demand of the students was supported by nurses, assistants and licensed doctors, who early this morning abandoned their posts upon the appearance of the police.

The minister of health characterized the doctors who left the patients unattended in the midst of an epidemic outbreak as "unmanly."

This conflict today threatens to involve the university, whose president, Camilo Mena, made known his support for the medical students, although he did not approve of the strike as the means to demand an increase in their scholarships.

#### FRENCH TERRITORY OF AFARS AND ISSAS

##### ANTI-TUBERCULOSIS CAMPAIGN

Djibouti LE REVEIL DE DJIBOUTI in French 29 Jan 77 p 3

[Article by P. Beylau]

[Text] Next February first, as happens every year, the anti-tuberculosis stamp campaign will begin. Organized by the local committee for protection against tuberculosis, its object is to raise funds which will enable this disease to be fought.

Tuberculosis in the territory is a veritable scourge. One medical consultant out of 10 is tubercular.

For the single city of Djibouti, 1,405 cases were found in 1976.

Among them 445 were people with Koch bacilli (KB) in their saliva, and therefore extremely contagious.

It is estimated generally that, for one known ill person, there exist, in fact, two others who are unknown. That would bring the number of tubercular persons to 4,500 for the city of Djibouti.

Having related this figure to the estimated population, one can estimate that 3.5 percent of Djiboutians are afflicted and that 1 percent are "overtly" tubercular, capable of spreading the disease. In the face of these worrisome figures, two questions arise: why is the disease continuing to progress and what are the means which have been implemented to remedy this state of affairs?

Dr Guidi, responsible for the anti-tuberculosis fight and for this reason technical adviser of the anti-tuberculosis committee, helped us pinpoint this grave problem.

## A Disease in Progression

In spite of systematic tracking and expanded means of fighting it, tuberculosis has not regressed. On the contrary, the number of the sick is greater in 1976 than it was in 1975 (33 percent more). For Dr Guidi, three factors explain this phenomenon.

First, the reappearance of the disease among the sick. Twenty-six percent of them admit coming from neighboring countries (Yemen, Somalia, Ethiopia), where means of fighting the disease, it seems, are inferior to those of the territory.

In these countries the standards adopted for combating tuberculosis are those of the WHO: these standards are the minimum standards.

Only the most afflicted are treated (those with KB in their saliva).

The therapeutic level of neighboring nations is also below that of the FTAI. The range of medications is more restricted and does not permit all resistant cases to be overcome. The sanitary network also seems more dense in the territory than in the neighboring countries. All these reasons, added to the fact that in the FTAI the care is entirely free, work so that many of the sick are not from the territory, and that in spite of all the efforts of competent services, there is a permanent influx of newly tubercular people.

The second element which can explain this progression of tuberculosis is the lack of perseverance in treatment. As soon as a patient feels better he stops his care, while it takes 18 months of uninterrupted treatment to make every trace of tuberculosis disappear.

The third cause of the spread of the disease is socioeconomic.

Promiscuity brings with it dangers of very rapid contagion. Malnutrition prepares the way for all illnesses, one of which is TB.

A weakened organism is much more susceptible than an organism in good condition.

The tuberculosis phenomenon is thus the result of an overlapping of factors which should be fought on a global scale.

## Fighting Tools

Tracking is the first requirement for fighting the disease. It is found at all levels: for enterprises, an X-ray exam takes place every year at the SMI [expansion unknown] for the entire staff. In the public service sector, the same exam is performed in specialized centers, and in schools (tuberculin skin test, X-ray check for the primary level at 7 and 11 years

and at the secondary level every year). The range of medicines used is broad: streptomycin, INH [isonicotinic hydrazide], Trevintix, Trecaplix.

Certain microbial colonies are indeed resistant to one or several medicines, and consequently it is necessary to use three antibiotics in order to have the greatest chance of destroying bacillar colonies.

When the disease nevertheless resists the three products generally used, two others are at the doctors' disposal: Rifadine and Ethambutol.

These are very costly medicines which are used only when the other antibiotics have been shown to be ineffective.

The fight against tuberculosis was undertaken directly by the city.

A special agreement was concluded for that purpose with the Ministry of Health.

In 1976, 2,650,000 FF from the capital were allocated to the fight against this disease. This budget is overseen by the State Ministry of Finance and permits the operation of centers, payment of personnel, and purchase of medicines.

Beyond this public financing, the Committee for Protection Against TB, presently presided over by Mr Vincent Dell'Aquila, makes an important contribution to the anti-tuberculosis fight. The annual stamp campaign allows for the collection of money.

This money is then distributed to centers in prorated shares according to their activities.

With these funds one proceeds to buy food. Food rations are allotted to tuberculosis patients as the most needy.

The sick leaving the hospital with no resources thus find help, which not only allows them to accelerate their cure by a nutritional complement, but also to "fix" them near the treatment centers.

The tubercular coming from the bush would be obliged to return to their families, being unable to survive, if no dietary aid were furnished to them. Interrupting their treatment, they would rapidly fall back into the state in which they were before being treated. What is more, they would multiply the risk of contagion.

It is, consequently, indispensable that the sick be kept near the treatment centers. To do that one must feed them. The 1977 stamp campaign will be a significant help in the fight against tuberculosis.

Be generous and don't think that having tuberculosis only happens to other people.

## GABON

### MEASLES EPIDEMIC

Libreville L'UNION in French 15-16 Jan 77 p 1

[Text] A measles epidemic has broken out in the department of Medouneu (Woleu-Ntem). Among the cases recorded (50 in all) the deaths of four children have been listed, declared Dr J. Gilles, technical adviser for major epidemics at the Ministry of Public Health.

Alerted Wednesday morning, a team of specialists in major epidemics has traveled to the site and has proceeded to make a general examination of the children in the said locality and has had two patients hospitalized. In addition, medical care has been given to those who needed it.

Further, a new campaign of vaccination against measles will be undertaken to guard against any possibility of an epidemic. But first, parents should be warned against this disease which is not in itself serious except for the lung and eye involvements which it brings on.

Finally, parents are advised to bring their children to the nearest medical center as soon as possible after appearance of the first symptoms.

## GREECE

### INFLUENZA CASES INCREASING DAILY

Athens TA NEA in Greek 8 Jan 77 pp 1, 10

[Text] The influenza cases multiplying daily throughout the country present these main characteristics: high fever persisting several days, generalized weakness, severe headaches.

Nevertheless, the competent public health services have so far not observed any specific serious incidents indicating that we are faced with a full-fledged epidemic.

As reported from both Thessaloniki and Larisa--where stricken persons number in the thousands--the public health services are closely following the course of the disease and if necessary, will consider a general immunization campaign.



#### And in Athens

A rise in the number of influenza cases has also been noted in the Athens area, although serious specific incidents have also not been reported there.

However, medical authorities whom we contacted last night expressed doubt as to whether or not we are actually confronted with an influenza epidemic.

#### No Research

This is caused by the fact that--as far as available information shows--no laboratory research has been conducted so far on isolation of the influenza virus, an indispensable procedure if the competent authorities were required to adopt the necessary measures.

For the present, all public health services are merely dispensing general advice--such as avoiding closed spaces, staying in bed and calling a physician as soon as some symptoms are evident, etc.

#### In Larisa

Larisa, 8 Jan (from our correspondent)--Influenza cases in our city and in the whole area are rising, numbering many thousands. There is no Larisa household without one or two, and sometimes more, victims.

The symptoms of the disease are high fever peaking at 41°C [105.8°F] and lasting up to 5 days, severe headache, weakness and nausea. Many of the victims are also suffering from diarrhea. So far, there have been no reports of more severe cases to public health services.

However, because of the severe symptoms present, physicians are stressing that this is not a common seasonal influenza outbreak, but something of a more serious nature, and they are considering the eventuality of general immunization. Many children have been absent from school from the very first day.

The number of stricken persons crowding drugstores, IKA [Social Insurance Foundation] clinics and the Larisa General Hospital for treatment and drugs is larger each day.

No lack of pharmaceuticals has been reported, supplies are ample and the population is being taken care of. Lastly, private physicians are unable to meet the increased demand for their services from patients coming to their offices or requiring house calls.

Physicians stress that the unseasonably warm weather prevailing these days also contributes to the increase of the disease.

## INDONESIA

### DEATH TOLL FROM CHOLERA

Perth THE WEST AUSTRALIAN in English 14 Jan 77 p 5

[Text] Jakarta--The death toll from cholera in the northern part of central Timor Island has increased to 86, with 374 others in hospital.

Perth THE WEST AUSTRALIAN in English 25 Jan 77 p 25

[Text] Jakarta--Forty-nine people have died of cholera this month on the Indonesian island of Sumbawa, east of Bali.

## IRAN

### INFLUENZA AFFLICTS THOUSANDS

Teheran ETTELA'AT in Persian 10 Jan 77 p 3

[Text] A wave of influenza has gripped the Middle East and part of Iran as a result of the severe cold weather, and thousands of people in Teheran and other cities have been afflicted with influenza and colds and have had to stay home or be hospitalized.

Nutritionists have advised parents that the consumption of protein increases the physical resistance of children.

According to the WHO weekly report, a wave of influenza has gripped Europe and parts of the Middle East. This report states that, with the penetration of the Russian cold weather to areas of central Europe and central Asia, influenza now exists in epidemic proportions in Czechoslovakia, France, Hungary, Italy, West Germany, Sweden and Tunisia. Moreover, this illness is prevalent in parts of the Middle East.

According to reports received from the cities, when the northern, western and central areas of the country became cold, influenza and colds increased in those areas, and, according to doctors and managers of drugstores, at present countless groups of people in the capital, both young and old, have been affected by the influenza virus. Statistics of local doctors and pediatricians show that more than 70 percent of the people visiting doctors' offices, treatment centers and medical clinics are suffering from colds.

### Determining the Type of Virus

Dr Manizheh Khakpour, professor of virology in the Health College, said in this regard that the recent cold weather has caused the increase in activity of the influenza virus in Iran, and right now the experts in the virology section of the college are trying to isolate the influenza virus and to determine its type. She added that it appears that the present virus is different from previous viruses.

Moreover, pediatricians have warned parents that they should be wary of the dangerous pitfalls of influenza because it is a pulmonary illness and that it is not necessary to raise the physical resistance of children with injections; rather, one should take advantage of protein-rich foods such as meat and milk and the like to increase their physical resistance against colds and infections.

### VICTORIA INFLUENZA OUTBREAK IN TEHERAN

Teheran ETEELA'AT in Persian 20 Jan 77 p 40

[Text] Thousands of people in Teheran have been confined to bed by Victoria influenza. This type of influenza has been diagnosed to be very dangerous for the elderly and children. Influenza has many side effects. The side effects on the lungs can be dangerous for children and those who have had pulmonary problems.

Based on statistics issued by hospital and clinic centers in Teheran, in recent days influenza has been widespread in Teheran. Most of those who go to the clinic centers are those suffering from Victoria influenza.

The symptoms of influenza are headache, pain in the bones, vomiting, hoarseness of voice, weakness, sinus pain and pain in the neck. Influenza has pulmonary, digestion and brain side effects.

Dr Manizhah Khakpur, teacher of bacteriology at the college of hygiene/medicine announced, "Recently, influenza which had an outbreak in Teheran was differentiated from other types of influenza by doctors and researchers. It was identified as 'Flu 75.' It is so called because for the first time in 1975 the flu was diagnosed in the state of Victoria, in America [sic]. After long study, it was found that it was the first outbreak of such influenza. Duration of the flu is longer than other types of flu."

Dr Khakpur warned, "In some families, when someone gets influenza, he goes to the doctor, receives a prescription, and then keeps the rest of his medicines. When another person in his family becomes sick, with symptoms similar to the flu, they use the rest of the medicines for him. They should not do this at all. The method of treatment for different

types of influenza and their side effects are different. If someone has Victoria influenza, the doctor should write his prescription after considering the type and intensification of the disease."

#### DISTRIBUTION OF DOCTORS IN IRAN

Teheran ETTELA'AT in Persian 18 Jan 77 p 3

[Text] The latest statistics show that there is one doctor for every 2,031 Iranians throughout the country. The Research and Studies Center of Better Health and Hygiene will be established under the supervision of the Ministry of Health. This center which will start working with the cooperation of outstanding researchers will study hygiene and better health.

One of the important duties of the center is to survey the living (status) of different classes of people. Better health services for special groups will be conducted under the supervision of this center. The center will also study special health problems of different areas, based on which it can do its programming. Such programs will be reported to all of the district organizations of hygiene and better health through the central headquarters of the Ministry of Health and Hygiene.

One of the programs of this center is to make plans concerning the human power required for hygiene and better health programs.

Statistics issued by the Ministry of Health indicate that at present, the total number of physicians and dentists in the country is 14,243. In addition, there are 2,000 alien doctors in the employ of the Ministry of Health, 900 of whom work in villages, 500 in small towns, and the rest at charity institutes and organizations. Thus, according to the new statistics, which show a population of approximately 33,000,000 persons in Iran, every 2,031 Iranians have one physician. The official of the Ministry of Health said, "It is very difficult to transfer doctors to the villages. But, this does not mean that we would neglect covering the villages with health facilities. By establishing health houses in the villages which have a small population and using them as a health network, we will be able to cover all of the villages by medicare. And, those who are not insured can use the clinics of the Ministry of Health, the Imperial Organization of Social Services, and the RLSS (The Red Lion and Sun Society)."

## POLIOMYELITIS DROPS PROGRAM

Teheran TEHRAN JOURNAL in English 31 Jan 77 p 3

[Text] The capital's 400,000 school children will be vaccinated to protect them from polio during the severe cold wave now sweeping Tehran.

A spokesman of the Central Province Health and Welfare Organization said that 1,000 medical centers, both mobile and stationary, had made preparations to administer polio drops to the school going population.

In addition, health visitors will be calling at homes to administer the drops to children staying indoors.

The vaccine is given in three doses. In Tehran, the first dose will be given after February 5, the second after April 20 and the third after May 21, it was said.

## ISRAEL

### INCIDENCE OF POLIOMYELITIS AND CHOLERA

Jerusalem THE ISRAEL ECONOMIST in English Dec 76 p 15

[Text] A strenuous campaign by the Health Ministry has succeeded in inoculating more than 80 percent of all children in Gaza since July of this year following a recent outbreak of polio. Seventy-five cases in Gaza and a further 12 in Judea and Samaria have been reported so far this year. Cholera, too, has once again made its appearance in the West Bank after a recent large-scale outbreak in Amman, Jordan. Failure by the Jordanian officials to report the new epidemic when it first appeared led to its introduction by travellers from Jordan to the West Bank and Gaza. Health authorities have now imposed stringent supervision of agricultural imports but isolated cases continued to appear throughout November and December.

## PERU

### IODINE DEFICIENT DIETS PROBLEM AMONG SCHOOL AGE CHILDREN

Lima EL COMERCIO in Spanish 10 Jan 77 p 4

[Text] Endemic goiter--a disease caused by the lack of iodine in the diet --affects 50 percent of the student population in vast areas of Peru, according to indications of specialists of the Cayetano Heredia University.

This has been confirmed mainly in the areas of Madre de Dios and Cusco, San Martin, Callejon de Huaylas, and the sierra of La Libertad Department.

This disease is considered one of the most serious problems of human malnutrition and public health all over the world.

There is a law in force in our country which makes mandatory the iodization of salt for human consumption. The problem, however, still persists in view of the scant importance that people attach to the consumption of such salt.

As Dr Eduardo Pretell emphasized, it is necessary to have continuous educational campaigns, and a salt distribution and marketing network which will guarantee its permanent availability without straining the family budget.

The Peruvian expert also recalled that almost 11 years ago, WHO entrusted to the Cayetano Heredia University the testing of a new method of prophylaxis and treatment. The use of an intramuscular injection of iodide oil was proposed at that time. The mentioned injection protects against iodine deficiency for a period of 3 years.

The subject of endemic goiter will be amply discussed in the Scientific Sessions starting today at the Cayetano Heredia University. A completed study that is to be presented to the gathering has demonstrated the need to supply the prophylaxis to women of fertile age, to prevent the occurrence of endemic cretinism and varying degrees of mental retardation which are observed in a high percentage of children borne by mothers who are not treated against iodine deficiency.

#### DOCTOR WARNS OF TYPHOID OUTBREAK IN LIMA

Lima LA CRONICA in Spanish 11 Jan 77 p 10

[Excerpt] Lima presents the right conditions for the occurrence of a typhoid fever epidemic, such as the one which several years ago produced a great number of deaths in Mexico City, warned Dr Eduardo Gotuzzo Herencia yesterday in the course of the first Scientific Sessions of the Cayetano Heredia University of Peru.

Those conditions are created by the drinking water and sewerage problems which the capital suffers in its most populous sections, the deficient hygienic practices, and the proliferation of street food and refreshment vendors who are not subject to any sanitary control. Soberly and in detail, the doctor also said that the frequency of typhoid in the country--always very high--has been increasing in the last few years at the same time that the disease is becoming more virulent.

Jointly with three other doctors of the Tropical Medicine Service and the Hematology Unit of the Cayetano Heredia Base General Hospital, Dr Gotuzzo yesterday presented two research works on typhoid fever at the aforementioned event.

#### NEARLY ALL PERSONS IN AYACUCHO SUFFER FROM MALARIA

Lima EL COMERCIO in Spanish 12 Jan 77 p 5

[Text] Ninety-five percent of the water-front population bordering on the Ene river is suffering from malaria, yesterday declared Dr Raul Cantella of the Cayetano Heredia University.

This information was made public in the record of the scientific workshops which were held in the Petroperu auditorium to commemorate the 15th anniversary of this center of higher studies.

Cantella urged Ministry of Health authorities to allot more funds for the campaigns which conduct work on the eradication of malaria, because otherwise, he added, there would be the danger of the woodland regions becoming epidemic hotbeds.

On the same occasion, the researcher, Julio C. Soto, also begged the university and government authorities to give greater impetus to scientific research in the medical science sector.

He said that not only should a doctor be trained to deal with disease but also be sufficiently skilled in preventing these ills.

#### TUBERCULOSIS REPORTED IN CHANCHAMAYO

Lima EL COMERCIO in Spanish 31 Jan 77 p 3

[Article by Javier Ascue Sarmiento]

[Excerpts] Chanchamayo--Three percent of the rural population in the Chanchamayo and Perene valleys suffer from acute tuberculosis.

Tuberculosis is attacking this population mainly because it lacks proper nutritional orientation, according to our findings during a trip through these valleys which have a prolific fruit output.

The farmers, right now, have no one whatever to advise them on better nutrition or how to balance their diet, despite the existence in the area of highly nutritious products such as the soybean.

To the lack of guidance is added the consumption of coca, a product which "they chew" in order "to feel neither hunger nor fatigue," as they say.

The farmers who are largely attacked by the Koch bacillus are those who work in regions far removed from the principal cities in the Chanchamayo valley, such as La Merced and San Ramon, where there are social insurance hospitals.

Because of the distance, they cannot have recourse to their respective control stations, useless when the disease is already far advanced.

#### A Station to be Equipped

The main care of tuberculosis patients in Perene is carried out preventively at the medical station which is in Pampa Whaley, situated inside the grounds of CAP [Agrarian Production Cooperative] "Juan Velasco Alvarado" Ltd. 181.

There farm hands and individual workers come to be cared for. It is mainly through reports received in this medical center that we know that of the existing tuberculosis cases, 3 percent is to be found among the rural population of the above-mentioned valleys.

Instructions from the above-mentioned CAP and the person in charge of the station will show that on innumerable occasions they have informed authorities of the existence of said locale which could be equipped to serve the needs of the farmers in the area.

The medical station has room for 25 beds and a basement in which to attend to some thousand outpatients.

The negotiations--they will show--have been in the hands of Social Insurance and the Ministry of Labor for the past 3 years.

## QATAR

### HEALTH OFFICIAL SAYS NO CHOLERA IN COUNTRY

Doha AL-'AHD in Arabic 9 Nov 76 pp 20-21

[Interview with Dr al-Sayyid Ahmad Taj-al-Din, director of preventive medicine]

[Text] On my way to meet Dr al-Sayyid Ahmad Taj-al-Din, the director of preventive medicine and the man in charge of building immunity against epidemic diseases and of preventing their infiltration to the State of Qatar, I remembered the words and the talk by some people reiterating that some cases of cholera appeared in Doha, that the patients have been taken to hospitals and that the officials are concealing the news so that



panic may not spread among the people. Therefore, the first question I addressed to Dr Taj-al-Din was:

[Question] Is there cholera in Qatar?

[Answer] There is absolutely no cholera in Qatar. Our siege against it prevents its infiltration into the country.

[Question] But there are reports that some cases of cholera have been discovered in the country and that you are concealing the news.

[Answer] Why should we conceal the news? Such an act would be considered an international crime. Moreover, is Qatar a tourist country that fears that tourist groups will stop flowing into it and that it will lose the income earned from tourism? No, sir. There are some people who spread rumors and others get carried away by such rumors without giving them a thought.

[Question] What have you done to prevent the infiltration of cholera?

[Answer] Every arrival through the borders is given a dose of tetracide to kill the germs, if he happens to be harboring them.

[Question] Is this enough?

[Answer] No, sanitation comes first, especially sanitary food and clean vegetables which should be washed well and to which lemon juice or vinegar should be added before they are eaten. This is enough to kill the germ if it is present. Moreover, water should be boiled and food should not be eaten in public food establishments, regardless of how clean they look externally and internally because you can never be sure of the hands of the worker who prepares the food. Such a worker's hands might be contaminated with his secretions and he might not observe sanitary habits. As I have already said, there is the germ vector and this kind of person does not develop the disease but infects others with it through his secretions, his urine and his feces and his failure to observe sanitary physical habits.

[Question] But what is a vector?

[Answer] The intestines of some people have the capacity to harbor the microbe without developing the disease and this is why they can communicate the germs to others.

This vector constitutes a great danger because he can move freely and spread the disease among people.

Therefore, all the citizens should pay special attention to their physical cleanliness after defecation. The hands must be washed well and vegetables

also must be washed well. Cleanliness alone is capable of wiping out the germ.

[Question] But does a vector continue to be contagious forever?

[Answer] No, rest reassured because this state does not last more than 3 days. Yet, we still give every arrival on the borders a dose of tetracide for fear that there might be a disease vector. Tetracide has proven effective against this microbe.

[Question] After being reassured that Qatar is free of cholera, we want to know what cholera is?

[Answer] It is a very weak comma-shaped microbe that is endemic in South-east Asia where the sanitary capabilities are backward and where people urinate and defecate in rivers, thus making them a serious vehicle for communicating the microbe from one place to another.

[Question] Who discovered cholera?

[Answer] It was discovered by Robert (Jogh) in 1884 who said that the infection travels through secretions. However, two other scientists challenged him to take the microbe orally and one of them almost lost his life in the experiment but he was given some liquids quickly.

[Question] But what are the symptoms of cholera?

[Answer] Diarrhea and vomiting and the body becomes dehydrated in a matter of hours.

[Question] And what is the cure?

[Answer] Injecting liquids into the patient's body quickly, either intravenously or by intramuscular injections and this can only be done in a hospital.

[Question] Is there a drug that the patient can take to kill the microbe?

[Answer] In the phase in which the patient is secreting his body fluids, the drug is of no consequence because the body will secrete it with the liquids. Therefore, the drug is only given after the diarrhea and the vomiting are stopped so that it may kill whatever germs remain in the body.

[Question] Does the disease have any aftereffects on the patient after he is cured, like typhoid?

[Answer] Not at all, because the microbe hits the stomach only and is too weak to affect any other part of the body.

[Question] A final question, what did you do after it was officially declared that Syria, Jordan and Saudi Arabia are areas in which cases of cholera have appeared?

[Answer] First, the vaccination campaign that is proceeding actively, as you can see. Second, preventing the entry of vegetables arriving from these areas. Third, the campaign to clean the city of rubbish and to eliminate flies.

Fourth, making sure that people arriving from these areas have been vaccinated by checking their international vaccination certificates. In addition to all this, every arrival is given a dose of tetracycline to kill the microbe in case he happens to be a vector.

I left Dr al-Sayyid Ahmad Taj-al-Din with an easy mind. But at the same time, I urge every citizen to pay attention to public sanitation because cleanliness is the true eradicator of this disease and of other diseases.

## REUNION

### PARASITOSSES LEADING CAUSE OF CHILDREN'S HOSPITALIZATION

Saint Denis TEMOIGNAGES in French 26 Nov 76 pp 1, 2

[Text] "If analyses are made systematically, we perceive that 75 percent of the children are in fact parasitized." This was written by our colleague LE QUOTIDIEN DE LA REUNION in an article in its Saturday edition devoted to a visit to Saint-Louis Hospital, a visit conducted under the direction of Dr Fourmaitreaux, a pediatrician, during an "open-house day" organized to celebrate the 30th anniversary of the USOR [expansion unknown].

"What were the reasons for hospital admission in 1975?" asked our colleague. "...Parasitoses were in first place (30 percent), followed by otorhinolaryngological disorders (28 percent), digestive (24 percent), pulmonary (14 percent), and neurological (12 percent) disorders, etc."

Thus, parasitoses are at the top of the causes of children's hospitalization; this is not in itself a surprise after Professor Lariviere's conclusions a few years ago, according to which nine out of 10 persons in Reunion were infected with parasites. But what these figures do show is that, several years after this finding by Professor Lariviere, parasitoses still remain a scourge in Reunion, in spite of certain statements hinting that, if not completely abolished, they had at least diminished considerably.

Hospitalization for parasitosis in itself stresses the seriousness of the problem, all the more so in that of the 3,330 admissions to Saint-Louis

Children's Hospital in 1975, 30 percent, i.e., about a thousand, were for parasitoses.

Parasitoses, by definition, are a disease of impoverished countries, and from that point of view Reunion is no exception.

## RHODESIA

### WILD PLANT MAY AID BILHARZIA BATTLE

Salisbury THE RHODESIA HERALD in English 3 Feb 77 p 4

[Article by Colin Neilson]

[Excerpts] An extract from a wild African plant may help in the battle against bilharzia. The soap berry has detergent properties and can kill the water snail that harbours the parasite which infests monkeys, cattle and man.

The curious thing is that the Ethiopian berry is lethal to snails. But the Rhodesian plant has little or no effect.

Blair Research Laboratory deputy director Dr Clive Shiff said: "We tried out the extract sent to us from Ethiopia. It killed our snails. Dr Akilu Lemma of the institute of patho-biology at the University of Addis Ababa has been experimenting with the soap berry since 1964.

"We asked the National Herbarium for samples of the soap berry. It is the same plant that grows in many parts of Africa--the Latin name is *Phytolacca dodecandra*--but although this is also used to wash clothes and contains saponins, there was no effect," he said. "Yet Dr Lemma's extract is toxic to snails."

### Interest

He said he did not know if the soap berry would kill fish as well, but this was possible.

"I think it would cost more to grow the berries than to use soap powder. I know once the scientists started to take an interest the price of the wild soap berry in Ethiopia escalated in the local markets."

Dr Shiff said a root which grows prolifically in the Inyanga district had been sent to Blair Research by a rancher named Horsefall who had noticed that it contained properties that killed snails.

"We tested it and found that a water-based extract from the root was extremely toxic to snails," he said. "My own worry is that these plant toxins are so unknown that tremendous amounts of research and testing have to be done before we can begin to use them. They can be more dangerous than the chemical treatments used at present. They could affect the whole ecology of our rivers. Plants, fish, birds and animals could be poisoned."

A London report on the soap berry said trials with the concentrated essence used in rivers in the Ethiopian low-lands had shown a drop in the incidence of bilharzia among children aged one to five.

#### Poison

Work on the Inyanga root as a molluscicide (snail killer), has produced other results. A chemist at the Government Agriculture Research Centre, Mr Jim Tannock, said this plant has been used from ancient times as a fish poison.

"It appears that a compound we have isolated--either a steroid or a terpene--could be a coming thing in medicine. It is our dearest wish that we may have stumbled on a wonder drug."

Mr Tannock believes the chemical, which has still to be refined, isolated and synthesised before being tested on laboratory animals, is a precursor to cortisone. It could have valuable medical uses such as in the control of pregnancy.

Corticosteroids are used in medicine to control such varied conditions as hormonal deficiencies, allergies, eye diseases and severe sunburn.

### TANZANIA

#### DEATHS FROM RABIES

N'djamena INFO TCHAD in French 27 Jan 77 p 10

[Text] It was learned yesterday in the Tanzanian capital that between October and January, 34 persons died of rabies in the Nzega and Igunza districts, in central Tanzania. The population has been mobilized to get rid of stray dogs while at the same time antirabies vaccination is being dispensed throughout the districts and the surrounding area in order to stem an epidemic.

## TOGO

### PILOT POLIOMYELITIS VACCINATION CAMPAIGN

Lome TOGO-PRESSE DENYIGBA in French 21 Dec 76 pp 1, 5

[Text] Prof and Mrs Habs, respectively patron of the Lome Ernst Rodenwaldt Institute, Public Health specialist of the Bonn University and member of the social organization "Aktion Friedens Dorf-Bonn" recently visited Lome.

During their stay Mr and Mrs Habs met the Public Health authorities with whom they discussed the problem of poliomyelitis.

The history of the creation of the Danyi Apeyeme Center for the Rehabilitation of the Handicapped was reviewed, as well as the difficulties encountered at its beginning, leading to the closure of the center, and the creation of Lome National Orthopedic Equipment Center (CNAO) in 1974.

In the course of a report, Mrs Habs recalled certain studies on poliomyelitis carried out by CNAO in the Togo territory and showed that the prevalence of the disease was at the rate of 9/1000. From this rate and the demographic data on Togo, Mrs Habs estimated the cost of the care given to the victims and compared it with the cost of prevention by vaccination. According to her the total cost for care and rehabilitation of 1,000 victims would amount to 555,000,000 CFA francs.

The vaccination of all susceptible children would come to 35,000,000 CFA francs.

Mrs Habs therefore favored prevention by vaccination and requested the Togo Public Health authorities to set up an immunization program covering vaccination teams, refrigerating units, transport, vaccine, and vaccination equipment. Mrs Habs' organization is prepared to act, provided that Togo makes an explicit request to WHO and to two or three industrialized countries, in order to cope with this campaign. WHO would coordinate the multilateral aid. Copies of this request would be sent to Mrs Habs (Aktion Friedens Dorf-Bonn). At present, Aktion Friedens Dorf-Bonn is prepared to release for Togo 2,040,000 CFA francs to vaccinate approximately 3,000 children in a test area in Togo.

After a long discussion on the study of the vaccine, the vaccine supply, the type of vaccine to purchase, combined vaccinations, the efficacy of vaccines (oral and parenteral) the following was decided by common agreement:

--Immunization against tetanus and poliomyelitis will be by injection of Salk and Tetanol type of vaccine.

--To start, 2,667 children will be immunized.

--The test area chosen was the Lama-Kara Health District, with the reservation of future extension.

--The Ernst Rodenwaldt Institute was appointed to approach the vaccine manufacturers to insure its economical supply.

The Togolese Public Health authorities thanked Mr and Mrs Habs, and requested them to approach organizations and countries as possible donors of aid for the program.

#### TURKEY

#### HEPATITIS REACHING EPIDEMIC PROPORTIONS IN IZMIR

Istanbul CUMHURIYET in Turkish 4 Jan 77 pp 1, 9

[Text] Izmir (CUMHURIYET Aegean Bureau)--An infectious strain of hepatitis is reported to be spreading throughout Izmir in the past few days. To prevent further spread of the disease, the provincial health director's office has warned the public not to eat fruits and vegetables unless they are thoroughly washed beforehand.

The number of patients with hepatitis at various hospitals in Izmir is reported to be increasing. Large numbers of them have been determined to have an infectious strain of the disease. Doctors have asked that the public be alerted to the disease.

Assistant Provincial Health Director Ibrahim Ozturk confirmed the presence of infectious hepatitis, but denied that it was as widespread as claimed. He emphasized the necessity for anyone who thinks he has the disease to go to the hospital without delay.

The assistant provincial health director said that there were two types of hepatitis, infectious and noninfectious. Noting that the infectious strain has to do with sanitation, he announced the following preventives necessary to contain spread of the disease:

"One kind of hepatitis is caused by gall bladder failure or various cancer-like tumors. This is the noninfectious kind. Another strain of hepatitis is infectious, contagious. It can be contracted easily from unwrapped food purchased from an infected person. To protect against infectious hepatitis, fruits and vegetables must be thoroughly washed in chlorinated water. We can control main water; washing thoroughly with main water can prevent hospitalization. It is necessary that the public be aware of this and exercise caution."

Ozturk said that the disease could readily be detected by the victim's eyes. "The white of the eye becomes yellow. He is feverish and listless. Treatment takes at least 20-22 days. A doctor's care is imperative," he said.

#### TUBERCULOSIS FATALITY RATE FALLS

Istanbul AKSAM in Turkish 10 Jan 77 p 5

[Text] Ankara--Health and Social Assistance Minister Dr Kemal Demir, in a speech launching the 30th Tuberculosis Education and Propaganda Week, said the tuberculosis fatality rate has fallen to 15 in 100,000.

Demir said, in summary: "Tuberculosis is one of the major health problems with a social and economic impact throughout the world. The fight against tuberculosis, conducted through a scientific program of information, resourcefulness, and dedication for more than 20 years, has been successful as the result of the government and the people working together.

"We owe a debt of gratitude to everyone who has contributed to this success, which has been praised in WHO documents as the 'Turkish miracle.'

"The fatality rate in our country around 1945 at the end of World War II was 262 per 100,000, rising to 300 per 100,000 in the big cities.

"In tuberculosis probes made in the 1960's, we were finding 25-30 cases per 1,000, whereas today the rate per 1,000 of tuberculosis cases requiring treatment is 1.5."

#### UNITED ARAB EMIRATES

##### UAE TO IMPORT CHOLERA VACCINE FROM EGYPT

Abu Dhabi AL-ITTIHAD in Arabic 30 Oct 76 p 4

[Text] The Ministry of Health has decided to take all preventive measures against any potential outbreak of cholera, after cases of the disease appeared in several bordering countries. Dr 'Abd-al-Rahim Ja'far, representing the ministry, announced that 700,000 doses of cholera serum will be imported from the Arab Republic of Egypt.

A quantity of that serum, amounting to 30,000 doses, arrived yesterday.

A study is now underway with respect to the establishment of centers in various parts of the state in order to be prepared to inoculate the citizens immediately after the appearance of any case of the disease.



The police have issued instructions to the police stations at border entry points to prevent the passage of any vegetables coming from the bordering countries, in accordance with the directives of the Ministry of Health, in order to keep the disease from penetrating the country.

Dr 'Abd-al-Rahim Ja'far stated that fresh vegetables are one of the most serious ways of transmitting the disease to human beings.

Dr 'Abd-al-Rahim stressed the necessity of being careful to clean and wash vegetables thoroughly before they are eaten.

He said that he felt it was a good idea to add a small proportion of potassium permanganate to the water used to wash vegetables and that the ministry has asked the Water and Electricity Department to increase the chlorine content in the water supply system as a preventive measure against any diseases.

On the other hand, the inoculation centers of the Preventive Medicine Service are beginning today to receive all Moslems desiring to fulfill the religious obligation of making the pilgrimage to Mecca this year to take the necessary anti-cholera doses. Instructions were issued to airlines and pilgrimage agencies not to permit any person to travel to Saudi Arabia to fulfill the pilgrimage obligation unless he has obtained a certificate of inoculation showing he has had two doses of the cholera serum.

An official source in the Preventive Medicine Service stated that these are merely preventive measures insuring that everyone will have a good pilgrimage.

## USSR

### INFLUENZA AND PREVENTIVE TREATMENT

Moscow TRUD in Russian 8 Dec 76 p 3

[Article by Professor G. Karpukhin, director of the All-Union Institute of Influenza, Leningrad; edited by Chairman of the Academic Council of the USSR Ministry of Health, Vice President Academy of Medical Sciences, USSR A. S. Pavlov]

[Text] The last summer-fall period was characterized by the spread of influenza epidemics in the regions of South America, South Africa, Southeast Asia, Oceania and in Australia. The epidemics were caused by virus influenza resembling the A-2 (Victoria) 3-75 strain. (Incidentally, it also was the disturber of the influenza calm in the winter of 1976 in our country.)

What is the situation in regard to influenza in the USSR now? In November morbidity from this infection increased in several of the country's cities. They were Alma-Ata, Tashkent, Frunze, Karaganda, Barnaul, and Murmansk. The possibility cannot be excluded of a moderate increase in the immediate future of morbidity from influenza throughout the entire territory of our country. Reports appearing here and there on the danger of "swine" flu have not been confirmed. Today despite the increased attention given this infection, it has not been recorded anywhere.

But it is not desired for people to believe that ordinary influenza is harmless. Such an opinion would be wrong. This is an acute infectious disease very harmful to the health.

The tremendous damage that this infection inflicts on people and the economy is to be explained primarily by its widespread prevalence throughout the entire globe. Ailments from influenza have a much higher incidence than any of the other infectious diseases.

The continuing increase in the speed of modern means of transportation increases the possibility of the spread of influenza both within the country and on a global scale. Its epidemics do not know geographic barriers, state boundaries and affect people of the most diverse ages.

Some people have gotten used to influenza, paying little attention to it and enduring it "on their feet." But this insidious infection is not always light and can provoke very serious complications either in the lungs or in the cardiovascular system. Frequently it affects vitally important organs--the heart, kidneys, nervous system. Influenza sometimes disables a patient and may indirectly increase fatalities, especially among persons suffering from cardiovascular ailments, diseases of the lungs and so forth.

It must always be remembered that a person sick with influenza serves as a source of infection to healthy people.

Prevention of the spread of influenza illnesses is an important task of medical personnel. The health organs of our country, taking into consideration the social danger of this disease, regularly implement planned measures aimed at its prevention. In 1967 there was established in the USSR the only one of its kind--the Scientific-Research Institute for Influenza of the USSR Ministry of Health, on whose base the All-Union Center for Influenza operates. About 40 support bases located in different cities of the country are constantly observing and investigating catarrhal ailments and for this reason are able to record immediately the beginning of an outbreak of influenza. These data come to our institute. They are processed on electronic computers. Then an effective forecast from the mathematical point of view is made of the development of the onset of the disease in different cities of the country. Thanks to such organization of registration and prediction, USSR health organs receive precise information on the spread of this infection and can organize properly medical assistance to those stricken.

But it is difficult to achieve a complete victory in the difficult struggle with influenza without the development of highly effective preparations and without raising the sanitary level of the population, without its active participation in all preventive measures.

How does the influenza virus penetrate the human organism? The virus multiplies in the mucous membranes of the upper respiratory tract. It is emitted together with droplets of saliva and sputum in sneezing or coughing. These tiny droplets are dangerous to human health. So it is that the influenza virus is essentially transmitted through the air. The biggest danger to one infected with influenza lies in the first 2-3 days after the onset of the illness. It must be remembered that not just the air of a sick person's dwelling but his personal belongings can also be infectious. Food from the same dishes, the use of a common towel and handkerchiefs contribute to the spread of influenza in families, children's institutions and so on. It is best to isolate the sick person, either by putting him in a separate room or by separating his bed with a curtain. As a means of individual defense during the period of an epidemic, the use of a gauze mask, especially when caring for an influenza patient, is recommended.

The struggle against influenza is a difficult task. The scientists of different countries are engaged in solving it. At the present time, the efforts of investigators are directed at looking for improved methods of its prevention and treatment. Among the first of these, mention should be made of inoculation with a live influenza vaccine. With timely and proper use, it lowers morbidity two- to threefold during an epidemic. Where inoculations are done at the same time for an entire collective, morbidity is reduced even more in such cases. Following injection of the vaccine, the organism acquires immunity against the influenza virus for about 12 months. Influenza assumes an easier course among those who have been inoculated.

Today oksolinovaya ointment is widely used as a preventive measure; it should be applied twice daily, in the morning and evening, to the nasal passages. Good results have been obtained from the use of interferon--a blood preparation, hindering multiplication of the virus.

For reducing the toxic effect and easing the course of difficult cases of influenza, use is being made of an anti-influenza donor gamma globulin. A new preparation--remantadin, with a broad spectrum of antiviral activity --is now being tested and commercially developed.

A significant role in the complex of anti-influenza measures should also be given to person prevention. We know that the general condition is responsible not only for the possibility of catching the disease but also for the severity of the course of the disease; consequently much depends on general strengthening measures (physical exercises, conditioning and so forth). Daily rubdowns of the body with cool water, air baths in the

summer serve as one of the most accessible and effective ways of preventing influenza infection. But it must be noted: conditioning of the organism should be started in childhood and continued throughout one's whole life.

Preventive measures should be conducted in a planned manner, without waiting for a rise in morbidity from influenza. An effective anti-epidemic measure is early detection and timely isolation of influenza patients, which limits the spread of this infection.

#### 'INVISIBLE' VACCINE CREATED

Moscow PRAVDA in Russian 24 Dec 76 p 3

[Text] A scientific discovery in the field of medicine was registered on 23 December with the State Committee for Inventions and Discoveries of the USSR Council of Ministers. The authors of this work are staff members of the Central Scientific Research Institute of Tuberculosis of the USSR Ministry of Health--N. Shmelev, I. Dorozhkova and Z. Zemskova.

Inoculation of children for the production of immunity against tuberculosis is now being carried out in more than 90 countries. But it was not known until recently for what reason it is retained in the organism for a long time: several months later it is not possible to detect any bacteria of the vaccine.

Soviet scientists have established that weakened tuberculosis microbes in the organism are retained for many years, but they assume a biologically modified form--the so-called L-variant. The tuberculosis bacillus in this instance acquires a completely different structure: it may be in the form of globules, grains or other structures. For this reason they were not detected with earlier used methods in microbiology. Now with the help of a specially developed complex of methods these "invisible beings" can be found. It is they that have the ability of creating a responding reaction by the organism and maintaining immunity thereby.

The discovery will be helpful in working out recommendations for a review of existing ones and determining new time periods for repeat inoculations. It is important for the study of modified variants of live vaccines in other diseases.

## ZAIRE

### YAMBUKU EPIDEMIC ERADICATED

Kinshasa ELIMA in French 19 Dec 76 pp 6-7

[Text] The Yambuku epidemic, which has raged since last September in the Bumba zone, can be considered as completely eradicated.

Therefore, all quarantine measures taken to this effect have been lifted as of last Thursday.

Citizen Ngwete Kinkela, state public health commissioner, who issued this important communication to the Zairian Press Agency (AZaP) Thursday morning, revealed that these measures could have been lifted as of last 5 November, the date on which the last death was recorded.

However, because of a systematic investigation being made throughout the zone involved, the lifting of the quarantine was delayed for a few days.

Citizen Ngwete indicated that the investigation consisted of visits to all 530 localities; similarly, 32,949 houses were visited systematically one after the other by a team made up of Zairian and foreign doctors of the international team, as well as Zairian paramedical personnel.

The team and the Zairian paramedical personnel moved about either by helicopter or by automotive vehicles so as to learn exactly the number of persons living in these localities, the number of sick persons, and the number of dead.

"Thanks to this investigation," the state public health commissioner explained, "my department was able to know the exact number of deaths, which was in fact lower than the figure communicated earlier, as some patients were counted twice, in the locality of origin and at the place of death.

"Thus, 237 deaths were tallied over all the localities since the epidemic broke out. Although 10 or so cases still remain, [text missing] will not be able to surpass 300 deaths in all.

"Further, 261 cases of disease have been identified overall, and 17 persons are convalescing," he specified.

In addition, the public health official revealed that, although the epidemic is already throttled, he has decided to maintain a laboratory unit at the site. The unit's mission is to proceed with the collection of plasma from the convalescents.

Currently, Dr Ngwete specified, 10 of the convalescent cases must have given plasma; 55 units have been taken from them, making Zaire at the present time the only country which has available such a possibility for treating this disease.

Further, Zaire has already sent out 2 units of this serum, which served to treat and cure laboratory technicians in London affected with the disease.

Two other units have served to treat one of the coworkers of the international medical team who, at a certain time, was suspected of being affected during the investigation in Yambuku itself.

The collection program, which hopes to obtain 200 units of serum, will continue until the end of January 1977.

Dr Ngwete admitted, however, that the risk has not been completely avoided, as the disease could appear in another neighboring country, just as it has not been possible to identify the starting point of the first case.

"Taking this potential risk into account," he said, "we recommend permanent vigilance and watchfulness to the population."

For this purpose the medical personnel have been requested to declare any case of hemorrhagic fever, as they have done until now, and to apply the instructions which have been disseminated by the Health Department.

Finally, the state health commissioner elucidated the factors which allowed the epidemic to be wiped out.

He called attention in this matter to the fatherly solicitude of the Guide Mobutu Sese Seko, who, upon being informed of the situation, had taken steps both necessary and indispensable and had consequently ordered the solution which was immediately required to throttle the evil.

He thus put all logistical, support, and transport means at the disposal of the medical team charged with the mission of eradicating the epidemic.

A principal element, the public health official also noted, was the strict prevention and protection measures taken by his department; he went on to praise the feeling of solidarity which enabled an international medical team to be sent to the site so rapidly, while necessary means of action were placed at its disposal.

He next cited the contribution of the Zairian physicians as well as of the national paramedical personnel who gave proof of their availability and devotion throughout their mission.

The state public health commissioner finally noted that in spite of a few moments of panic, the population was cooperative and disciplined. While

understanding the seriousness of the situation, the people had put confidence in the officials. This was the case [text incomplete] containment instructions to limit the spread of the disease.

On last 7 October Dr Ngwete had sent details to the AZaP about the "very murderous" epidemic which had been raging since 5 September in the Bumba zone (Yankonge collectivity) on the equator.

Energetic measures had been promulgated at that time, consisting mainly in a strict blockade of the contaminated zone and in prescribing precautions to be taken by the residents and medical personnel. A team composed of specialists from friendly countries and from WHO, as well as of Zairians, was dispatched to the site.

Professor Pattyn of the Tropical Institute of Antwerp, Belgium, is the person who had succeeded in isolating and then identifying the "Ebola virus," previously called "Marbourg virus."

The "Ebola virus" disease was contracted for the first time in the world by a tourist at the close of a tourist trip to the South African Republic.

#### PRC DONATES POLIOMYELITIS AND OTHER VACCINES

Kinshasa ELIMA in French 1 Feb 77 p 7

[Text] A batch of poliomyelitis vaccine (in the form of pills) donated by the People's Republic of China to the Executive Council of the Republic of Zaire arrived by plane at Kinshasa last Friday, 28 January. The representative of the Public Health Department received it at the N'Dili international airport.

This quantity of vaccine against infantile paralysis is sufficient for 300,000 children. Poliomyelitis is a disease common in Zaire.

It is learnt from the Chinese Embassy that other vaccines supplied by the Chinese Government, including the lyophilized Bille-Calmette-Guerrin vaccine, the mixed vaccine against whooping cough, diphtheria, and tetanus, and the lyophilized smallpox vaccine, each type for 1 million persons, will be sent in installments to Zaire.

## ZAMBIA

### FRANCE DONATES MENINGITIS DRUG

Lusaka TIMES OF ZAMBIA in English 12 Feb 77 p 2

[Text] There is a serious increase in meningitis in Zambia, Minister of State for Economic and Technical Co-operation, Mrs Lily Monze, said in Lusaka yesterday.

Mrs Monze said this when she received a gift of 5,000 doses of type "A" antimeningitis vaccines presented to her by the French ambassador to Zambia, Mr Jean Francais.

#### Number Had Increased

She said that 1,655 people were treated for cerebral-spinal meningitis in hospitals throughout the country last year.

The minister said that the number had now increased sporadically in all sections of the community including prisons and schools.

The Party and Government had now taken measures to combat the disease, hence their approach to the French government for assistance.

She said she was impressed with the speed with which France had responded to the appeal for the medicine, which was made last year.

Mrs Monze said that the donation had saved the Government a lot of foreign exchange which could have resulted from the importation of the drug.

The gift had come at the right time when the Government was seeking assistance on ways and means of combating the disease.

"I am grateful that you are going to help us in other areas in which we are trying to combat the disease.

"For example, you have offered us scholarships for post-graduate studies for two doctors to pursue a specialised course in the disease," she said.

The French government has also offered to send a world reknowned specialist in meningitis, Professor Lapeyssonnie, who is also a member of the World Health Organisation, on a two-week visit to Zambia in June.

Prof Lapelyssonnie [sic] would, during his stay, give lectures at the University of Zambia regarding the killer disease.



The vaccine has been prepared by the Meriex Institute of Lyon, a specialised institute which led to the success of the huge campaigns of vaccination against meningitis in Egypt and more recently in Brazil.

Replying to Mrs Monze's remarks, Mr Francais said he was very pleased that his government had met the appeal by the Zambian Government.

He said that the vaccine was a special drug which needed to be kept under great care.

The vaccine is enough for about 20,000 people, according to the permanent secretary for the Health Ministry, Mr Noah Kolala.

## II. ANIMAL DISEASES

### BRAZIL

#### UNIDENTIFIED DISEASE KILLS CATTLE IN INTERLANDIA

Brasilia CORREIO BRASILIENSE in Portuguese 24 Dec 76 p 8

[Article by Alexandre Cavalcanti]

[Text] In recent months, the number of cattle killed in the district of Interlandia, Municipio of Anapolis, where distressed cattle ranchers are helpless to know what to do to put an end to the disease which has been attacking herds of cattle in the region, has risen to 230.

Despite appeals by Interlandia cattle breeders, the majority of whom have little or no schooling, officials in the Goias department of agriculture and ACAR-GO [expansion unknown] have still been unable to identify the so-called plague, and ranchers have found it impossible to obtain any antidote to combat it.

#### Hematic Carbuncle

Although specialists have not yet diagnosed the cause of death of Interlandia cattle after consulting books by Dercimar da Costa Marques, "Criacao de Bovinos," and "Doencas Infecto Contagiosas dos Animais Domesticos" by Osmano Hipolito, Moacir G. Freitas and Jose Brito Figueiredo, ranchers believe the plague which is killing cattle may be "Hematic Carbuncle," commonly known as "Carbuncle." It kills without warning, almost without any perceptible symptoms of disease: the cattle do not froth at the mouth nor do they become sickly.

According to these same books, which are highly regarded in veterinary circles, this disease has an incubation period of from 1 to 14 days. A cow may be sick without anyone being aware of it, and it can still give milk, which in turn must be contaminated. This milk is sold at the

Salgado plant in Anapolis and from there it is delivered to distributors, with serious danger to the consuming public.

This is not the only danger. With his cattle dying almost daily and financial ruin staring him in the face, the cattleman may, in order to avoid more serious problems, quite easily get rid of his herd by passing it on. This would result in the contamination of the purchaser's herd.

Not wishing to contaminate his fellow cattleman's herd, or even out of some feeling of regard for him, the rancher standing by helplessly watching his cattle die would still have another option: he could sell his cattle for butchering, with unspeakable danger to the consuming public.

Even where no bad faith is shown by the rancher victimized by the so-called plague, this may unintentionally still turn out to be the case, because the disease is not apparent in the incubation period and cattle are sold as if they were in perfect condition, without any suspicion of disease, because of the ignorance of a majority of cattlemen on the subject.

#### Specialists

According to cattlemen Olimpio Martins Farias, Israel Chaveiro and Sebastiao Manoel de Silva, commonly known as Sebastiao Tobias, some specialists from the Goias secretariat of agriculture and from Acar have already gone to Interlandia, where some of them managed to extract and examine some material for analysis, whereas others did not even want to cut into the cattle.

According to cattlemen, the specimen taken for analysis in Goiania seems to have disappeared, because up to now, no analysis has been received and the disease remains undiagnosed.

In view of these problems, two cattlemen picked up the cadaver of a cow and took it to the Federal Veterinary School in Goiania, hoping instructors there would take more interest in the matter. Actually, there was more interest there than the ACAR veterinarians had shown. However, the analysis has not yet been received and this was almost a month ago, more than sufficient time.

#### Prayer

Rumors reached Interlandia that a plague was ruining cattle breeders by killing dozens of head of cattle in Corumba and Goianeses, and also in the interior of Goias. Similar rumors were being circulated that the problem had not been solved until after a witch doctor passing through the region had said some prayers at several of the affected ranches!

Now, almost completely disillusioned as far as any possible solution was concerned, the Interlandia ranchers then decided to do the same thing and

found a witch doctor who spent several days going from one property to another praying over the whole bovine herd in the region! Result: He was either an imposter or his faith was weak, because the cattle kept on dying and even on a larger scale.

#### Tobias

Sebastiao Manoel da Silva, commonly known in the Interlandia district of approximately 3,000 inhabitants as Sebastiao Tobias, shows his desperation in his face and demeanor. With his face showing visible signs of fear and a 10-kilo weight loss, Tobias only began to calm down a little after his friends called him and tried privately to console him by saying that it would soon pass and that his herd would be all right again.

Sebastiao Tobias is the owner of approximately 400 head of cattle. He has already lost more than 50, the majority milk cows, reducing thereby his milk production by more than 50 percent, with staggering losses.

"We are all desperate and are just waiting for the federal authorities to come back to the problem and help us. I can't even manage to sleep right because I'm sure the first thing in the morning I'll receive news that one or two cows have died during the early morning," Tobias said.

#### Olimpio

Olimpio Martins Farias, despite having almost no schooling, is the one best able to communicate. He is a leader in Interlandia. He even possesses greater insight. Olimpio is one of a group of those who are completely desperate and he has announced what he is going to do in case there is no immediate solution.

"I'm going to sell my cattle before I end up without one head and rent my land." After saying this, Olimpio thought a little and then backed down.

"No, I don't even know what I'm going to do. I've always been an honest man, and this is not the time to take any other road. I can't sell the cattle knowing that it might be diseased and thereby injure others. I'm going to stick it out to the end," he declared.

Olimpio Martins Farias is the owner of almost 300 head of cattle and up to now has already lost 45, the majority also being milk cows. On the day of the visit by reporters from CORREIO BRASILIENSE, three cows had died, all milk cows.

Up to now, other neighboring cattlemen have lost 125 steers. Among them was Anesio, who lost 25; Joao Pedro Sobrinho, 30; Jarbas Elias, 35; Jose Neca, 35, and Israel Chaveiro, 10.

### A Non-professional for Lack of a Specialist

Sandoval Rodrigues, Junior, an odontology student and son of Sandoval Rodrigues, also an Interlandia rancher who is quite preoccupied about the so-called plague, has kept abreast of the CB reporters' factual report, and with the help of books by Dorcimar da Costa Martes, Osmane Hipolito, Moacir G. Freitas and Jose Brito Figueiredo, he made some tests on dead steers.

Although the tests made were not official because they were made by a non-professional, it is almost certain that the disease that is killing the Interlandia bovine herd is indeed the "Hematic Carbuncle," at least pending proof to the contrary.

### Incineration

According to the above-cited books, it is always well, in dealing with the "Hematic Carbuncle," to burn up cadavers of dead cattle, thereby averting worse contamination, which is readily transmissible by earthworm and black vultures. The earthworm defecates and when cattle go to graze, it may also eat the Carbuncle microbe. In the case of the black vulture, after it devours the carrion, he spews it out a bit further on, thereby passing on the microbe to other pasturelands.

## LAOS

### DOMESTIC ANIMAL EPIDEMICS INCLUDING DIPHTHERIA

Vientiane BULLETIN QUOTIDIEN in French 30 Nov 76 p 5

[Text] On 10 November, the veterinary service of Paksan District, Vientiane Province, sent out a team of veterinarians to care for domestic animals hit by epidemics, mainly diphtheria, in the communes of Sivilai and Paksan.

### LIVESTOCK VACCINATIONS

Vientiane BULLETIN QUOTIDIEN in French 30 Nov 76 p 4

[Text] On 10 November 1976, the veterinary service of Paksan District, Vientiane Province, sent out personnel to carry out a round of vaccinations against epizooty and poliomyelitis in the communes of Sivilai and Paksan.

## PERU

### JOINT ECUADOREAN-PERUVIAN EFFORT TO CONTROL FOOT-AND-MOUTH DISEASE

Lima LA CRONICA in Spanish 15 Jan 77 p 2

[Text] In order to protect the development of their respective cattle ranches, Peru and Ecuador have erected permanent and mobile stations at strategic points along the boundary line for the control and eradication of foot-and-mouth disease.

In compliance with the bilateral agreement which will soon be signed, Peru, through the Ministry of Nutrition's program for the control of foot-and-mouth disease, will set up a permanent station in the town of Latina; two mobile stations in La Palma and Anchalay, and four domestic stations in La Avanzada, Las Chancas, El Elpalme and Kamaringa.

Ecuador, in turn, taking its hilly topography into consideration, will set up a total of eight either permanent or mobile foot-and-mouth disease control stations.

In the meantime, the Ministry of Nutrition, through its Tumbes regional control station, has just completed the third stage of the anti-foot-and-mouth disease cattle immunization campaign in every cattle ranch along the Ecuadorean border line.

To intensify this campaign, the Ministry of Health has authorized the use of its refrigeration plants for the conservation of permanent vaccine supplies in order to make it possible to supply demands from the different foot-and-mouth disease control stations.

### FOOT-AND-MOUTH VACCINATION DRIVE REPORTED

Lima EL COMMERCIO in Spanish 26 Jan 77 p 34

[Text] Huancayo--During 1976, 323,000 doses of vaccine were given to the same number of beef cattle in the area by public health experts from the Tenth Nutrition Zone--National Program for Foot-and-Mouth Disease Control.

The vaccinations were carried out in three stages in Huanuco, Pasco, Selva and Valle del Mantaro.

The first stage was accomplished from 20 February to 20 March, when 101,896 animals were vaccinated. The second stage was carried out from 20 June to 20 July, when 116,031 doses were given, while the third stage was implemented from 20 October to 20 November, with 105,405 cattle receiving vaccination.

The task which the experts discharged also included health education prior to vaccinations.

Foot-and-mouth disease, which attacks cloven-hoofed animals and is looked upon as an illness causing serious economic losses, can be efficiently controlled only by means of vaccine, the price of which is 5.00 soles per dose.

In accordance with the directive given in the Final Resolution No 0469-76-AG, vaccination against foot-and-mouth disease is obligatory because of the numerous losses it gives rise to in cattle raising.

The certificate which is issued is an indispensable requirement for the purchase and sale of cattle and besides, no slaughter house which lacks this document can purchase any livestock.

Cattlemen who do not vaccinate their animals will have to pay a fine of 100.00 soles per non-vaccinated animal and 150 soles if it is a question of animals in transit.

#### VIETNAM

#### LAI CHAU PROMOTES PREVENTION, TREATMENT OF LIVESTOCK DISEASES

Hanoi NONG NGHIEP in Vietnamese 20 Nov 76 p 2

[Article by Minh Viet]

[Text] In the past few years, the prevention and treatment of poultry and livestock diseases in Lai Chau have begun to show some new developments. The veterinary system from the province down through the district and primary organizations has gradually been consolidated. The veterinary medicine material base, the provincial veterinary station and the Dien Bien and Tuan Giao District stations have been constructed, insuring that livestock will be vaccinated twice a year, during the spring and fall harvests, with good results. This spring the number of hogs vaccinated against swine cholera was almost twice that of the spring of 1975. Dien Bien and Tuan Giao districts and Lai Chau City vaccinated about 90 percent of the hogs and organized follow-up phases for booster shots, and consequently, no swine cholera developed.

However, the poultry and livestock disease situation in Lai Chau is very complicated. Swine cholera is a highly contagious disease which causes high losses to the livestock industry. Although we have been able to control the damage, there is still no base for eradication. Anthrax, a disease which can be transmitted to man upon slaughtering or eating the

meat of infected animals, is still found occasionally in such areas as Phong Tho, Tuan Giao and Muong Lay. A number of other diseases, such as leptospirosis, swine and cattle pasteurellosis and other parasitic diseases of livestock, still often break out. Lai Chau also has a rather long common border with a friendly foreign country, and preventing the influx of new diseases is a matter which deserves attention. Therefore, Dien Bien, Tuan Giao and Muong Lay districts have solemnly carried out disease control and slaughter regulation, directed a timely disease prevention and eradication effort, and have set up good veterinary regulations.

In order to restrict the damage done by livestock and poultry diseases to the lowest level during the coming winter-spring growing season, the veterinary cadre recognize that they must complete this year's autumn inoculation plan as to scope, inoculation ratio and time of inoculation, with emphasis on the two main diseases, swine cholera and cattle anthrax. On the other hand, the Lai Chau Provincial Veterinary Service has confirmed a long term mission for veterinary medicine, which is to set up a stable veterinary network from province and district level down to the primary organizations, guaranteeing highly effective activities with the capability for rapidly extinguishing diseases every time there is an outbreak, and making inoculation for prevention and treatment of disease a matter of practice.

So that the inoculation program this fall would be of high quality, the Lai Chau Provincial Agriculture Service prepared sufficient vaccine, antibiotics and inoculation paraphernalia and transported it to the districts, organized classes for the districts, and immunization forces with the proper technology, and executed the plan well.

#### SPREAD OF SEPTICEMIA STOPPED

Hanoi NHAN DAN in Vietnamese 21 Jan 77 p 2

[Text] VNA--Since the beginning of the current cold spell many cattle and buffalo rearing families in Trieu Phong District, Binh Tri Thien Province, enclosed animal pens to provide heat for livestock. In addition to reserves of dry fodder many families cut additional grass and gave their livestock warm water to drink. On cold days many families delayed taking their buffalo to the fields.

Immediately on discovering the existence of Septicemia at a number of farms the District Veterinary Medicine Bureau selected cadre to join with township veterinarians in inoculating hogs. Because of these timely protective measures Trieu Phong District stamped out the hog epidemic. Many townships in the district implemented positive measures aimed at preventing the spread of livestock diseases, such as prohibiting the sale of dead hogs, prohibiting the butchering of diseased hogs, etc. In many townships the farmers assembled family veterinary medicine kits.



### III. PLANT DISEASES AND INSECT PESTS

#### BRAZIL

##### ATTACK BY KILLER BEES

Rio de Janeiro O GLOBO in Portuguese 2 Feb 77 p 6

[Text] Sao Luis--A swarm of black bees attacked about 50 bathers on the beach of Calhau on Sunday, leaving tens of them bedridden. One of the victims was journalist Mario Coutinho, who ended up with a disfigured face. The victims showed signs of swelling, intense pain, chills and fever. All are under medical care. Children were the least affected because they took cover under cars. Adults attempted to flee. The authorities still do not know if they were African bees.

#### CAMEROON

##### MIRIDAE, THE CACAO-TREE PEST

Yaounde CAMEROON TRIBUNE in French 15 Dec 76 p 3

[Article by Ndzinga Amougou]

[Text] The Fifth International Conference of cacao-tree entomologists which began 2 days ago at the Yaounde Chamber of Commerce, continued yesterday with the opening at 10 am of the second scientific session, which was to be devoted to the bioecology of the cacao-tree Miridae. The meeting permitted the participants to examine minutely Dr E. M. Lavabre's publication on cacao-tree Miridae. This book, which was written with the help of a handful of international specialists on the subject, contributes greatly to cacao-tree entomology. The participants expressed in any case the hope that a second volume would soon be published to supplement the first. But as Dr de Mire stated, the emphasis should be placed on the

various fluctuations of the Miridae, which apparently constitute a phenomenon not yet understood. However, Miridae provide interesting factors for study. Up to date, a detailed examination has been made of abiotic factors alone. It would therefore be profitable to make a thorough investigation of biotic factors as well.

For his part, Dr de Cazy endeavored to explain the effect of abiotic factors (temperature and hygrometry) on the embryonic and larval development of the cacao-tree Miridae, *Sahlbergella singularis*. According to him, day and night temperature, humidity or light may enable us to simulate conditions which could help man in his struggle against this pest.

In conclusion, Mr J. W. Bahana, in his turn gave a brief history of cacao cultivation in his country, Oufanda, where the Miridae truly constitute a scourge for the cacao-tree. The session chairman Prof R. Kumar revealed that previous studies indicate the existence of an overall situation requiring intensification of efforts, and he promised to dedicate himself to this task in the coming years. In tomorrow's issue, we shall speak of the use of insecticides in the struggle against Miridae as well as methods adopted to fight for complete eradication of these Miridae.

#### PERU

##### VIRUS HARMING CORN CROP

Lima LA PRENSA in Spanish 14 Jan 77 p 12

[Text] A viral corn disease discovered 2 years ago on the central coast is increasing its frequency, harming, in particular, the Pardo, Chancayano and Diente de Mula green-ear varieties, as well as the PM-105 hybrid.

It was discovered by Eng Jaime Castillo from the Ministry of Agriculture and T. Hebert, professor at the University of North Carolina (USA).

The above-mentioned disease is found among young plants in the form of fine yellowish-green streaks parallel with the veins. These streaks meet, forming longer and ever-widening green blotches which eventually produce a clearly defined mosaic pattern. Necrotic spots later appear on the yellowish-green blotches and ultimately kill the leaves.

As a result of the disease, plants become stunted in development with small internodes. The male flower cluster is also harmed, for the spikelets develop in insufficient amounts, at the same time that they create defects in the fertilization which, in turn, produces a smaller number of female corn spikes.

## ZAIRE

### CAMPAIGN AGAINST DISEASE-BEARING INSECTS

Kinshasa ELIMA in French 12 Jan 77 p 3

[Text] "The cleanliness of our cities requires permanent sanitation in order to spare the population certain endemic diseases." These are the words of the regional commissioner addressed to the population of the city of Mbandaka during a people's assembly held in Mobutu Sese Seko stadium. Sixteen years of independence--16 years gone by already since Zairians have governed their own destinies. Several political and administrative entities have been brought into being or have been reorganized. Others are declining. This is especially the case of the city of Mbandaka, capital of the Equator region, where certain previously flourishing neighborhoods have lost their former good reputation. The population of this part of the republic, scattered across 32 collectivities, is not less hit by this decline, which is spreading dangerously. The roads, eroding away, constitute veritable mosquito lairs. No one can spend time in Mbandaka under these conditions without bringing back some bad memories of the greeting reserved for him by the mosquitoes and other insects harmful to man. The authorities, mindful of the well-being of the population, are today working strenuously against these beasts.

Public opinion will remember the existence of a sanitation department whose concern was the city's cleanliness. The workers of this sanitation department went around to the various neighborhoods in order to see about the state of cleanliness of the city. They spread insecticides in low areas and in gutters to kill the microbes and other [sic] foci of mosquitoes. Tin cans left somewhere in a street corner were hunted out. Landowners at that time were afraid of the workers in this department. The latter were important people in the society. They played a large role in the city in inciting the people to maintain their ground and surroundings in a permanent state of cleanliness. This result was caused by the fact that the sanitation department workers were merciless when they caught anyone who was remiss.

When the country achieved independence, a total shortage of material made itself felt to the extent that the people, with no one to keep after them, preferred to stand by and let the worst happen. Thus, several plots of land have today been transformed into areas suitable for mosquito multiplication.

The city of Mbandaka has reached more than 100,000 inhabitants. The problem of city maintenance is being felt sharply. Unfortunately, the sanitation department workers are becoming inoperative in every respect. The people are now asking themselves if this department has been eliminated. Expressly for our numerous readers, we interviewed the sanitation director,

citizen Kabengele, who informed us that the sanitation department has not been eliminated, still less the crew entrusted with city maintenance. This group has simply become inactive as a consequence of the economic difficulties that the country is experiencing in all areas. Speaking of the actual control of mosquitoes, he stated that this operation must be carried out in three phases, to wit: first, drainage operations: this work consists in draining all stagnant water and funneling it off to the trunk sewers. At this particular time, however, several sewers are dirty and full of filth and no longer allow the water to get through.

Second, lack of chemicals for killing mosquito larvae. During the previous period, the department was using fuel oil, which was less expensive at that time. This operation prevented the proliferation of mosquitoes.

Third, the actual campaign against adult mosquitoes by the use of appropriate insecticides.

If the three phases are required [sic] one may hope to have satisfactory results, our interviewee declared. He added that the subregion should take advantage of the presence of the Medigency company to clean out all stopped-up sewers and gutters, especially in frequently flooded neighborhoods. The speaker stated that the people cannot [sic] believe that mosquitoes will be completely wiped out, as the city of Mbandaka is built on a large swamp, which constitutes a veritable refuge for mosquitoes.

The state of uncleanness which certain sections of the city of Mbandaka are in is a concern not only to the regional authorities but to the higher echelons in the country. At the moment it is a matter of finding the ways and means to solve the problem posed by the presence of mosquitoes in the Mbandaka subregion in order to give this city back its former reputation for hospitality.

Thus the Executive Council--through the state commissioner for public health--has authorized the campaign for disinfecting the Mbandaka subregion and for ridding it of insects and rats. This campaign has been entrusted to the Medigency-Zaire company which will work in cooperation with the sanitation department of the city of Mbandaka. Speaking of the campaign for ridding the city of Mbandaka of insects, the administrator-director disclosed that it had a double objective: first, the destruction of harmful insects in their havens and other locations where they multiply, i.e., swamps, sewers, etc. Considering the particular topographical characteristics of the city of Mbandaka as a whole, our speaker has requested the subregional authorities to stress the collective works which must enter into the most practical plans for the sanitation of the city and, therefore, its cleanliness. Second, from the therapeutic aspect, the company will apply pesticide treatments in the areas that are especially wished to be protected. This is simply a matter of covering the surfaces to be protected with a quantity of insecticides such that the mosquitoes will undergo a lethal action upon approaching the sites.

Speaking of the method of treatment, citizen Kingousa disclosed that spraying and fumigation constitute the two means of treatment which are currently being used. According to whether it is a matter of a therapeutic or preventive effect, his "Medigency-Zaire" company will employ application methods and types of domestic insecticides which will assure both rapid and lasting effects, continued the speaker.

The company (in the person of its administrator-director) expressed the wish of seeing this campaign applied in all business establishments in order that the operation may be efficient. This will prevent the treated insects from taking shelter therein.

We know that the city of Mbandaka, by virtue of its geographical situation, constitutes a great breeding ground for mosquitoes, as the sanitation department official declared, who concluded that the big difficulty involves tackling the stagnant water. To do this the city must rid itself of the artificial shelters. Meanwhile, we request the authorities to set up a rational program for the works during which the company must combat these harmful insects.

## ZAMBIA

### ERADICATION OF TSETSE FLIES PLANNED

Lusaka TIMES OF ZAMBIA in English 17 Feb 77 p 1

[Text] The Government will spend millions of Kwacha on the eradication of tsetse flies in the country during the Third National Development Plan, assistant director (tsetse control), Mr Robert Stjernstedt, said in Lusaka.

Mr Stjernstedt said unlike in the current Second National Development Plan, the eradication programme in the TNDP would be carried out on a much larger scale.

It has been proposed to cover an area of 30,000 square kilometres, and that it was most important that the operations were followed up by development of these areas to avoid re-infestation.

#### Proper Planning Needed

"If properly planned, settlement will render the country unsuitable for re-infestation, and the tsetse problem will continue only at the very much reduced borders with the major fly belts," he said.

One third of the country is tsetse-infested at the moment. This includes most of the national parks and game management areas.

Mr Stjernstedt said that it was difficult to develop such areas because the fly would wipe out livestock and infect human beings.

Reports from Kalomo say that many villagers who had moved from unproductive areas of the district to settle in Chief Nyawa's area in search of fertile land, have been forced to return to their original homes because of tsetse fly.

Some families who had started building temporary houses pulled them down and returned to Chief Sipatunyana's area where they came from.

Fell Ill

One of the villagers, Mr Andrew Mweene, said in Livingstone yesterday that the people had no alternative but to abandon their new settlement.

Mr Mweene said that a man he had sent to the intended new home in Chief Nyawa's area to stamp trees for a maize garden fell ill after being bitten by tsetse fly.

Five other people who were preparing a site for a new village had fallen ill shortly after their arrival in the same area. They all complained of headache, feverishness and general body weaknesses.

In 1975, a British tsetse control expert, Mr John MacLennan, visited Zambia for three months to assess the situation and later submitted a report to the Government in which he recommended the use of hand-operated Knapsack sprayers during eradication operations.

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- END -